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ABSTRACT

This report is intended primarily for educators who have the responsibility for conducting or managing a needs assessment at the school or district level. Although most of the material relates to local assessments in the elementary and secondary schools, some information has been included on statewide assessments and on emerging efforts in community colleges and universities. The information was gathered from published and unpublished reports of needs assessments, examination of models, kits, and various instruments, and the (limited) theoretical and research literature in the field. The report is organized in three parts: Part 1, "The State of the Art," an overview of trends and major approaches; Part 2, "Needs Assessment Models," descriptions of the most widely available and characteristic models, together with some case studies of their application; Part 3, "How to Do It," management, some communication and other strategies, strengths and limitations, and social fairness issues. (Author)

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AN ANALYSIS OF NEEDS ASSESSMENT TECHNIQUES FOR EDUCATIONAL PLANNING AT STATE, INTERMEDIATE, AND DISTRICT LEVELS

by

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Office of the Alameda County Superintendent of Schools
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NIE-G-74-0062

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INTRODUCTION

Overheard in an airport limousine--one affluent young mother to another:

> Government money given to the schools is rather frightening. One year, all the children in my daughter's school can read. The next year, government funds are available for reading, and suddenly 50 percent of the children can't read! What *is* going on?

That's the question--what *is* going on in the schools? What are the real priorities? What are the critical needs? Who determines them? How do we find out? Where are we now and where are we going?

Needs assessment actually goes back to ancient China, and it is not new on the American educational scene. What *is* new is the effort in the last decade to develop conceptual needs assessment models, to use systematic processes for identifying needs and setting priorities, and to involve the non-school community in joint goal-setting and planning efforts with educators and students.

The scramble for federal dollars for categorical aid to schools, which has been a feature of much school planning since the passage of the Elementary and Secondary Education Act of 1965, has changed the rules of the educational game. Schools wishing to apply for grants under the competitive titles of the Act, particularly ESEA, Title III (innovative programs), must justify their requests with comprehensive needs assessment data. State departments of education have also received grants to develop models and to perform statewide assessments.

This report is intended primarily for educators who have the responsibility for conducting or managing a needs assessment at the school site or district level.

Although most of the material relates to local assessments in the elementary and secondary schools, some information has been included on statewide assessments and on emerging efforts in community colleges and universities. The information was gathered from published and unpublished reports of needs assessments; from examination of models, kits, and various instruments; and from the (limited) theoretical and research literature in the field.

The report is organized in three parts:

Part I. The state of the art. An overview of trends and major approaches.

Part II. Needs assessment models. Descriptions of the most widely available and characteristic models, together with some case studies of their application.

Part III. How to do it. Managing the effort, some communication and other strategies, strengths and limitations, and social fairness issues.

SOME QUESTIONS ANSWERED

What is needs assessment? A systematic procedure for finding out where the greatest gaps are between what learners know and can do, and what they should know and can do.

Why should I do a needs assessment? To make better decisions for educational planning. To be more accountable to students, parents, and taxpayers. To assign priorities to the greatest areas of need. To know how time, people, and educational dollars should be used to do the most good.

Who should do it? Everybody concerned with your educational system--students, teachers, other staff, parents, people in your community, business people, concerned citizens.

How is it done? There are some general steps that most "experts" recommend, but there's lots of room for variation.

When should it be done? If you have never done a comprehensive assessment before, you might take as much as one school year for a good study. Thereafter, updates in high priority areas might be done in the spring to lead into curricular and other planning for the next school year.

Where is it done? Needs assessments are appropriate from preschool through adult education. It can be done at one school or on one level at a time, or throughout the whole system.

SOME CAUTIONS

Needs assessment is here to stay. It can give you a lot of useful information. In this report you will find descriptions of many different ways of conducting a needs assessment, as well as the advantages and disadvantages of different approaches.*

But a word of caution is needed. Some of the most popular methods and the easiest to perform may promise more than they deliver. They may leave the participants with a glowing feeling of being really involved, but the information gathered may be superficial and short-sighted.

On the other hand, other approaches which take more time and seem like a lot of work may give you better and more reliable information for decision making. Only a close comparison of different models will tell you which approach is best for your school system's needs.

The question is: "What is a need?"

A wish or desire is not a need.

A goal is not a need.

A solution is not a need.

What is a need, what to assess and how to assess it, will become clearer in the chapters that follow.

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*The models and instruments referred to throughout this report are illustrative of current and emerging approaches. The list is not all-inclusive nor are those excluded without merit. Inclusion of any model does not constitute an endorsement of the model or of accompanying services.

CHAPTER 1

WHERE ARE WE NOW AND WHERE ARE WE GOING?

THE STATE OF THE ART

If you wish to conduct a needs assessment, several different types of instruments, techniques, and procedures are available. Some have been published as complete kits; others are simple survey or rating instruments to assess general or specific needs. Certain quantitative techniques and decision models have recently been published which hold promise for greater precision. There are also some general models which give guidelines for doing your own assessments, but which do not furnish instruments. Consulting firms offer services to accompany certain of these general models.

The most commonly accepted definition of a need is the difference between "what is" and "what should be." Most of the widely used models define "what should be" as goals of education, of varying degrees of specificity; and they discover "what is" by asking different people how well the schools are attaining those goals. In fact, in the majority of actual cases studied, the needs assessment had not progressed past the stage of assigning priorities to a set of general goals of education.

The great spurt of development in needs assessment is less than five years old. Few models or instruments have been extensively field tested for validity and reliability. Many in wide use have not published research findings. There is little evidence that theoretical and position papers, doctoral dissertations, and other university research have had much influence on what actually occurs in the field.

Promising studies undertaken cooperatively between university research bureaus and state departments of education have often been shelved for lack of funds or political support. The literature offers many examples of needs assessment efforts that began in the framework of comprehensive models but which ended either in a straightforward program of standardized testing or with a public opinion survey on educational goals.

Nevertheless, the interest in needs assessment at all levels is high and rising. Some instruments are not copyrighted and their widespread use and adaptation are encouraged. Whether copyrighted or not, certain basic discrepancy techniques have been freely borrowed and adapted by districts, often without acknowledgment of their source.

SOURCES OF INFORMATION ABOUT EXISTING MODELS/PROCEDURES

If you wish a quick overview of how to performa a needs assessment, or a comparison of different approaches, here are some recent publications:

Educational System Planning, by Roger Kaufman, 1972. Chapter 3 outlines the major functions and components of needs assessment, and places it in the context of system analysis.

Needs Assessment Guidelines. A booklet published by the Ohio State Department of Education, Division of Planning and Evaluation. Presents eight steps of a comprehensive needs assessment procedure, with instructions for implementation and examples of procedures and reports.

Needs Assessment in Education. A handbook published by the New Jersey State Department of Education (Kaplan 1974). One of a series on educational planning. Suggests ways of managing an assessment, sets criteria, and summarizes and compares the principal characteristics of four different models.

State Educational Assessment Programs. Published by Educational Testing Service, 1973. Summarizes the assessment models and procedures of all 50 states, the District of Columbia, the Virgin Islands, and Puerto Rico, and compares three kinds of programs. A good source of information on major issues, such as measuring cognitive and affective achievement, norm-referenced versus criterion-referenced testing, effect of different financing patterns, and major problems of state assessment programs.

Statewide Educational Needs Assessment. Gives an overview of the philosophies, methods, and findings from the assessments conducted by Kentucky, Maryland, New Jersey, Pennsylvania, and Virginia (Hershkowitz 1974).

For a list of general or comprehensive kits, instruments, or manuals suitable for elementary, secondary, or higher education needs assessment, see Appendix

A. For more limited or specialized instruments, see Appendix B.

TRENDS

A major characteristic of most approaches is that they employ some systematic method of collecting opinions or other data from many different groups inside and outside of education. This trend toward active community involvement seems likely to continue and to increase.

Most of the models and instruments are oriented toward the present, not the future. They rely heavily on what educators and citizens think the schools ought to be doing, and their judgments as to how well they are doing. They tend not to ask the hard questions or to probe very deeply into educational or social issues. Little progress has been made in validating the public's perceptions of "what is" and more importantly, "what ought to be."

However, certain trends have emerged within the last couple of years. One is the use of "futurology" and related techniques to anticipate needs in a much longer time frame--usually to the year 2000. The development of scenarios for alternative futures, and the use of Delphi studies to aid in planning whole new school systems, may well influence shorter-range needs assessment efforts (see Chapter 5).

Another trend is the development of new technology, such as Fault Tree Analysis, for analyzing the "real" as compared with the "apparent" needs of a system, for tracing causal chains, and for setting priorities on needs on the basis of relative probabilities of occurrence (see Chapter 6). Computer programs have also increased the feasibility of using multivariate analyses of data to aid in setting priorities.

Still a third trend is that institutions of higher learning are showing a strong interest in needs assessment. Present indications are that colleges and universities see needs assessment in a somewhat different context from school districts or state departments of education. They look to needs of the community, to manpower needs, and to the requirements of professions for the focus of the assessment, rather than to discrepancies between expected and actual performance of students. Nonetheless, models such as that developed by a consortium of Florida community colleges could very well be used by high schools (see Chapter 7).

Regional and inter-institutional needs assessment and planning efforts are also trends that hold promise. Results from these studies should be forthcoming in the next three to five years.

RESEARCH NEEDED

The field is markedly and sadly lacking in almost any kind of research on the processes of needs assessment. There should be validity and reliability studies on instruments, as well as studies of the effects of different assessment processes and communication strategies on the educational system. Longitudinal studies are needed to trace the impact of needs assessment on policy making, curricular change, organizational structure, and student performance. Cost/benefit comparisons of different approaches are needed. Studies might also be undertaken to test hypotheses generated by theoretical models, such as Kaufman's unility continuum (see Chapter 8).

FUTURE OF NEEDS ASSESSMENT

The large-scale development of recognizable needs assessment models and their implementation is still too new to know what the long-range effects of the process will be. Many questions remain. Were the expectations of completed studies ever realized? Are needs being more effectively attacked than before? What has happened to the programs which grew out of needs assessments in the early days of ESEA, Title III?

Other questions relate to methodology. Is one approach to needs assessment more valid than another? If a needs assessment relies largely on people's perceptions of current status, and those perceptions are based on scanty or inaccurate information, what are the consequences for the school district?

Few developers have shown how to relate such qualitative data as values, perceptions, and concerns to such quantitative data as test scores, demographic data, and transiency and absentee rates. Yet until such techniques are widely available, educators will assign priorities and make decisions using one-dimensional or over-simplified decision rules.

Still another question is the role of federal and state legislation and intervention in establishing goals and program direction for local educational agencies. What has been the impact of the priorities thus established? Have other, perhaps more pressing needs for the long term, been overlooked? For example, some federal and state mandates have stressed reading and cognitive skills as the major need for program development and funding. What about other needs and priorities that may be overlooked or slighted as a result? What will be the impact in the future on local decision making as well as on the educational competence of the graduates of the schools?

Powerful external influences on local perceptions of needs have come from requirements for programs under categorical federal and state funding. It is in this context that present and future efforts in needs assessment must be considered. Because of legislation, special funding, and other external pressures, schools may be hard pressed to take a fresh look at their goals and their programs. The present state of affairs encourages fragmentation and constant shifts in focus as external priorities change.

In 1966, when PACE* centers were funded under ESEA, Title III, their staffs were advised to assess the needs of students and the community and to develop innovative programs to meet those needs. Political realities nipped most of those efforts in the bud; programs were written and curricular and institutional changes undertaken with little or no systematic assessment of needs.

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*Projects to Advance Creativity in Education.

Nearly a decade later, we see a renewed interest in needs assessment, and probably more to the point, an increase in the sophistication and validity of the methodology available for accomplishing it. Regardless of the internal and external conditions which have occasioned this interest, needs assessments in the contexts of planning, evaluation, or accountability will no doubt continue to be an important responsibility of educational administrators.

CHAPTER 2

DEFINITIONS AND PURPOSES

This chapter elaborates on the first two questions raised in the introduction: (1) What is needs assessment? (definitions), and (2) Why should it be done? (purposes and advantages).

DEFINITIONS

The most commonly accepted definition of a need is "the measurable discrepancy between current outcomes and desired or required outcomes" (Kaufman 1972). It has also been called, "the difference between 'what is' and 'what ought to be'"; "the discrepancy between 'what is' and 'what is required'."

Needs assessment, then, is a systematic or formal procedure for determining:

1. A desired state of affairs--that is, a set of educational goals or other statements about "what ought to be" in the area(s) to be assessed.
2. The present conditions that exist in that area.
3. The kinds and degrees of discrepancy that exist between (1) and (2).
4. The reasons or causes for the discrepancies.
5. Which discrepancy (need) areas should be given the highest priorities for action.

Needs assessment can be directed to learner needs, to institutional needs, or both. Although many writers insist that the assessment should be concerned only with learner needs, in practice institutional needs are usually taken into consideration also.

Learner needs are focused on student performance, typically in basic skills or the cognitive domain, although many assessments now add the affective and psychomotor domains as well. Needs are usually related to "outcome" goals and objectives.

Institutional needs focus on school plant and other facilities, program, staff, and other resources. They are also termed process, administrator, or supportive needs. Institutional needs assessment is one way of analyzing the causes of discrepancies revealed in the learner-centered assessment.

PURPOSES

Needs assessments are undertaken because they will give information that would not be available otherwise. Four major reasons have influenced schools to undertake such assessments: for improved curricular planning, evaluation, accountability, and to support applications for federal funds for competitive programs.

Planning. Needs assessment is usually the first step in comprehensive program planning. It establishes direction and focus of basic curricular programs, sets priorities for future development, and gives the basis for allocating scarce resources.

Evaluation. The Center for the Study of Evaluation at UCLA considers needs assessment as a type of evaluation--indeed, the first step in evaluation (Klein and others 1971).

Needs assessment uses some of the same tools as evaluation--test data, reports, behavioral indicators, and observations. The purposes are different, however. Needs assessment in general looks to the future. It asks what should be done to improve education. Evaluation in general looks to the past. It asks what has been the impact of a given program on student learning. Evaluation data during and at the end of a program may profitably be used to assess areas of discrepancy which should be addressed for the coming year.

Accountability. In the last decade, state legislatures and local communities have demanded that school districts document their needs and provide a rationale for the way that they spend their funds.

There has also been a rising demand for more widespread participation in decision making. Teachers, students, parents, and the general community served by the schools want a voice in setting priorities for programs--and in some cases, in saying how those programs should be run. Other social forces playing a part have been the credibility gap between professional educators and the lay public, the antipoverty movement with its community action groups, and the consumer movement, which raised questions of governance and control.

Applications for federal funding. Title III of the Elementary and Secondary Education Act of 1965, which provided competitive funds for innovative educational projects, required a comprehensive needs assessment to justify the requests for new programs. In many states, supplementary (PACE) centers were set up under the Act either to perform functions related to certain curricular areas, or to become general planning centers. In the latter case, a major function was to design and carry out a systematic assessment of needs for the regions served.

In California, for example, each of the 21 PACE centers, serving single or multi-county regions, developed models of needs assessment and carried out elaborate studies to identify high priority needs in their areas. Many of the present models grew out of work that was done in those centers in 1966-70.

In 1969, the administration of ESEA, Title III funds was delegated by the U.S. Office of Education to state educational agencies. These agencies were then charged with the responsibility of developing models and conducting statewide assessments.

A renewed demand for needs assessment has come recently with the advent in some states of requirements for school districts to submit consolidated applications for federal and state funding. Such applications must be based on a comprehensive needs assessment at each school site (see California's Proposal for Consolidated Planning, 1974). H.R. 69, which extended the Elementary and Secondary Education Act and combined it with bilingual education, adult education, Indian education, and several other provisions, will undoubtedly continue to require needs assessment data in support of those applications where the funds are awarded competitively.

Recently, institutions of higher learning have received grants from Title III of the Higher Education Act to conduct needs assessments for comprehensive planning.

The purposes of needs assessments at regional and state educational levels, and in higher education, will be discussed in Chapter 7.

ADVANTAGES OF NEEDS ASSESSMENT

So far, the reasons for doing an assessment seem to come mainly from pressures on the schools from outside sources. But, you may ask, what's in it for my school? Is it worth the bother and will it improve education?

Here are some advantages that others have found:

1. As a program planner you will discover where the areas of greatest strength and weakness are in respect to student learning, thus laying the basis for more rational curricular planning.
2. You may find revealing discrepancies of various kinds among the perceptions of different groups--e.g., parents, students, educators, business people--as to how well the school is performing its job.
3. Unexpected or hidden needs and causes of ongoing or unresolved problems may emerge.
4. The assessment, if addressed to future and long-range needs as well as current ones, will provide for renewal in the school.
5. When needs assessment data are used in conjunction with data on cost/effectiveness and evaluation, you can make more defensible choices among program alternatives. A methodical approach prevents leaping to solutions on the basis of scanty analysis or evidence.
6. Needs assessment should also give you direction for placing priorities on allocating scarce resources.
7. When done successively over two or three years, the assessment will show trends related to increasing, declining, or changing

pupil populations.

8. Should you face decreasing public support for education, dropping enrollments, and demands for better performance of high school graduates, a good needs assessment will help you find the causes of the difficulties and set priorities for corrective action. The assessment will either uncover new information, or document and validate policies and programs already in action.

9. Needs assessments will also give you information for planning in special areas, such as education of the handicapped, health and guidance services, career and vocational education, needs of minority language and cultural groups, and multicultural education for all.

10. When you involve the community in the process, you are likely to find more acceptance for the resulting plans and policies than if educators alone assess the needs and make the decisions. Also, when dissident as well as supportive groups are given a voice, and their participation is invited in a constructive fashion, there is a better chance of reaching consensus on the areas of greatest need and on proposals to meet those needs.

Objections to performing needs assessments have sometimes been raised on the grounds that educators already know what the needs are, that the process is time-consuming, that there may be unwelcome repercussions from the public or from students, or that previous assessments turned up problems which have not yet been solved.

If previous studies did not result in the changes desired, it might be for any of the following reasons: (1) the data were not acted upon, (2) conditions in the school or the environment have changed, and further assessment should be done, or (3) changes were actually made, but were not documented or publicized.

Altnatives to needs assessment in the past have been: conventional wisdom, experience of the school district, expertise of professional educators, adoption of current fads or trends, reactive measures to social pressure, response to "sales pitches" from commercial publishers or product developers, and finally, tradition--"it's always been done that way."

While these approaches sometimes work, there is no assurance that the "real" needs, as compared with the "apparent" needs or symptoms, will be discovered.

In a national sample of 79 schools, it was found that elementary school principals would allocate discretionary funds mainly on student needs as observed by teachers, on mandates of the local or state board of education, or on the basis of standardized tests of student achievement. Rarely were suggestions heard from parents, and almost never from students (Hoepfner and others 1971).

Most decision makers are confronted with insufficient data on which to make important choices. The needs assessment process often brings to light information and attitudes of which administrators are unaware, especially discrepancies between their own priorities and perceptions and those of teachers, students, or the community.

CHAPTER 3

MAJOR APPROACHES TO NEEDS ASSESSMENT

NEEDS ASSESSMENT IN A SYSTEM CONTEXT

The most comprehensive approach is that taken in the context of system analysis applied to educational planning (Kaufman 1972, Sweigert 1971, Eastmond 1974). This can be conceptualized as follows.

The basic system-environment relations to be considered in the assessment are shown in Figure 1 (Miller 1970). In the typical needs assessment situation, the system is a school district with well-defined geographical and physical boundaries. It operates in an environment which is defined by its assigned attendance area, and in the still larger environment of a municipal or similar political unit. In turn, the system with its immediate environment is a subsystem of the state educational system, and finally, of the entire country.

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Insert Figure 1

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The instructional system consists of interactions and interrelations among six components: the learner, the teacher, the curriculum, the relevant methods-means-media, the learning environment, and the learning. The valued targets are future-oriented states or expectations, goals, objectives, needs, problems, and/or demands that generate forces for instructional change. Such targets establish significant relations between an instructional system and its environment and lay the basis for the system's purposes and output requirements.

Inputs to the system are resources, energy, and information used either to maintain the system or to be transformed into instructional outputs. The system processes the inputs through its programs and instructional processes. Outputs of the system are goal-oriented products, services, and/or benefits that the system produces and effects as a result of its performance. The most important outputs to assess are learner outcomes.

Feedback control establishes a "closed-loop" pattern of relations in the system by transferring information regarding the quality of outputs back along the feedback loop and comparing it with information available to the system and/or individuals as inputs, enabling the system or its members to improve the quality of performance.

The system in which needs are to be assessed may be a classroom, a department, a single school, a school district, a university, a region, a state, or an even larger unit. Needs assessment identifies "valued targets" or goals from sources both within and outside of the system, and identifies and analyzes discrepancies between the inputs and the outputs of the system, and between the outputs and "valued targets." In other words, the outputs are "what is" and the valued targets are "what should be." The gap or discrepancy between them is the "need."

Characteristics of needs assessment in the system approach are (1) it is systematic, (2) it considers events and information in interaction, not in isolation, (3) it is cyclical and iterative, and (4) feedback from any phase of the process gives information for other phases.

A GENERAL MODEL*

There is no one universally accepted model of needs assessment. Many models that will be described later on, however, were developed using a system approach, and use system analysis as the basic tool of the assessment. A knowledge of the system approach will also help you if you wish to develop your own approach. The sections on success and failure analysis in Chapter 10 suggest some guidelines and steps to be taken.

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*The term "model" is used throughout this report to refer to any generally coherent method or set of procedures for conducting a needs assessment.

A general system model that takes both present and future needs into account was developed by researchers at the Northwest Regional Educational Laboratory in Portland, Oregon. Their model contains a planning and evaluation cycle consisting of five activity clusters: (A) needs identification, (B) problem-policy transformation, (C) policy-program transformation, (D) tactical program design, and (E) monitoring. There are detailed intercommunication links among them, through associated management information systems (Bell and others 1971). Figure 2 illustrates Cluster A--needs identification--which sums up the process for a theoretically complete needs assessment.

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Insert Figure 2

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In this model, two groups of constituents are used to determine "what ought to be" and "what is." Both current and future expectations are synthesized and decision makers screen the need statements to identify those which can be appropriately satisfied through educational activity. Revised statements of expectations or needs are taken back to the originating groups for validation. The statements are then transformed to measurable, observable indices.

Data on "what is" are collected from existing records and supplemented as needed. Discrepancies between "what is" and "what ought to be" are analyzed and their magnitude and significance are determined. The output of Cluster A is a list of priority needs.

CRITERIA FOR A GOOD MODEL

Just as there is no universally accepted model, so there is no one generally used set of criteria for judging models. The following set, offered as a checklist of questions to consider when selecting procedures or instruments, combines ideas from several sources: the New Jersey State Department of Education planning book on needs assessment (Kaplan 1974); an analytical study by Southard (1974) at Florida State University; the State Educational Needs Assessment Project of Arizona (McGrath 1970); and a list proposed by a panel of experts (advisers to the present study).

1. General model characteristics

   --Does it have all the components of a complete model?

   --Has it been field tested and evaluated?

   --Is it easily replicable?

   --Does it provide for broad and widespread participation of the educational and lay community?

   --Is the cost reasonable, and commensurate with the benefits to be gained?

   --Does it have a clear management structure?

2. Technical characteristics

   --Are all the steps clearly explained and illustrated?

   --Are the limitations of the method stated?

   --Are the forms or instruments clear?

   --If no forms are provided, are there instructions for local development?

   --Are the data to be collected unambiguous? Is a distinction made between process/learner and outcome/institutional needs, and between "needs," "solutions," and "resources"?

   --Does it assess learner needs in the cognitive, affective, and psychomotor domains?

   --Is it feasible? practical?

   --Does it appear to have validity--i.e., will the process actually generate the data anticipated or needed?

   --Are methods given for synthesizing objective and subjective data?

3. Contextual criteria

   --Is the model adjustable to local conditions?

--Is it designed to develop a reasonable list of recommendations for action?

--Will the procedures be acceptable to different ethnic, cultural, and socioeconomic groups? Are non-English versions of the materials available for non-English-speaking participants?

--Does it have a built-in mechanism for continuity and easy transition to a succeeding model for the next stage?

--Does it provide some mechanism for renewal of the system, anticipating and responding to social changes?

--Is there a mechanism for evaluation of the process and of the outcomes of the needs assessment itself?

The development of models is still in the beginning stages. A model which might rate high on some criteria might rate lower on others. In your search for a model, or for a set of instruments or procedures, select the criteria that are most meaningful to you and apply them to models which appear to have the most suitable general set of characteristics.

SOME PRACTICAL MODELS

In this section are briefly listed some published models and instruments which, because they are widely used or illustrate important characteristics, will be referred to several times in the ensuing chapters. For convenience they are given in alphabetical order by the initials or "shorthand" terms by which they will be later identified.

Table 1 presents a matrix of descriptive characteristics of these models. Information about publishers and contact persons for these and other models is given in Appendix A. They are more fully described in Chapter 5.

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Insert Table 1

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ACNAM. Alameda County Needs Assessment Model for elementary schools.

Battelle. Surveys for secondary schools and community colleges from

Battelle's Center for Improved Education.

Bucks County. Instruments to assess extent of attainment of the 10 goals for quality education in Pennsylvania.

CSE Kit. CSE Elementary School Evaluation Kit: Needs Assessment, from the Center for the Study of Evaluation at the University of California, Los Angeles.

Dallas Model. A model developed by the Dallas (Texas) Independent School District, for all levels.

ESA. An accountability model published by Educational Systems Associates of Austin, Texas.

Fresno Model. Guidelines for a school-community conference, developed by the Fresno (California) County Superintendent of Schools Office.

IGI. Institutional Goals Inventory. For colleges and universities, published by Educational Testing Service.

PDK. Phi Delta Kappa distributes a model developed by the Northern California Program Development Center, Chico.

Westinghouse. Survey instruments for secondary level published by Westinghouse Learning Corporation.

Worldwide. A comprehensive system approach developed by Worldwide Education and Research Institute.

The above models are largely oriented toward present goals and needs. However, some projects have developed approaches to identifying probable needs in the future and to planning for them. Project SWEP (Skyline West Educational Plan for Dallas-Fort Worth); Project Redesign in Palo Alto, California; and Project Simu-School in Chicago, Dallas, and Santa Clara County, California, are examples. They will also be discussed in more detail in Chapter 5.

SOME THEORETICAL MODELS

The following theoretical models will also be referred to occasionally to illustrate certain themes. They will be described more fully in Chapter 9.

EPIC. A general evaluation model developed by the EPIC consultant firm in Tucson, Arizona.

ESCO. A model that relates educators (E), students (S), and the consumers of the educational product (C) to learning objectives (O) (Sweigert 1971).

Kaufman's Model. A comprehensive model in the context of system analysis, by Roger Kaufman. He has also identified three types of needs assessment strategies, which will be discussed in the section on generic strategies, below (Kaufman 1972).

Woodbury's Model. A research model for assessing state educational needs designed to facilitate interstate comparisons (Woodbury and others 1970).

EVALUATION OF MODELS

It is difficult to find research or evaluation data on the practicality, effectiveness, and utilization of most of the models. The ESCO model was one of the earliest to be field tested. The CSE Kit was extensively field tested in California and with a national sample before its final packaging and publication (Hoepfner and others 1971). The Bucks County model also underwent some field testing during development. ACNAM has undergone a field test in some 510 schools in California, and is being evaluated by users and administrators at the time of writing. As for the other models mentioned, most have been widely used and information on their acceptability is available from users and administrators. Case studies of some are reported in Chapter 9 for illustration.

Aside from field testing, however, there is no research which this writer has found that compares the effectiveness of one approach with another, from empirical data in the field, or which investigates the reliability or validity of the findings from the various approaches. Southard (1974) and Kaplan (1974) have compared some of the models on sets of *a priori* criteria.

GENERIC STRATEGIES

Kaufman has identified three generic strategies used in needs assessment: inductive (Type I), deductive (Type D), and classical (Type C). Figure 3 illustrates these.

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Insert Figure 3

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Type I is illustrated in such models as the Fresno, Bucks County, and Dallas models. In the Fresno model, a procedure reminiscent of Flanagan's Critical Incident technique (Campbell and Markle 1967) is used to generate statements of (1) what is keeping the school from doing the job it should do, and (2) what the school "ought to" be doing for the students.

In the Bucks County study, critical incidents were used to generate statements of specific areas related to each of the 10 goals of quality education of Pennsylvania. In the Dallas model, evaluation and the identification of needs precedes goal setting. Evaluation data from the previous year lead to needs assessment, which in turn leads to setting long-range goals.

Type D can be exemplified by the CSE and Worldwide models. The CSE model is "packaged," in that it offers a comprehensive list of goals and specific methods for identifying the performance data. The Worldwide model is a system-analysis approach that essentially follows Kaufman's Type D strategy, and offers extensive guidelines for implementation of each phase.

A variation of Type D is to begin with ranking a set of goals, then set priorities on those goals by identifying certain types of discrepancies, but without gathering performance data. In such models (PDK, Battelle), the "data" gathered are perceptions of different groups as to the importance of each goal, and the extent to which the schools are meeting the goals.

CHAPTER 4

COMPONENTS OF A NEEDS ASSESSMENT

Although there is considerable variation in contents and procedures among needs assessment models, there is substantial agreement that at least four components must be present in a complete model: (1) consideration of goals; (2) procedures for determining the present status of those goals; (3) methods for identifying, describing, and analyzing discrepancies between steps (1) and (2); and (4) methods for assigning priorities to the discrepancies found in step (3). So-called discrepancy models usually include all four components. Other models omit one or more components.

1. GOALS: DETERMINING "WHAT SHOULD BE"

DERIVATION OF GOALS

In discrepancy models, goal statements usually appear in an early stage of the process. They are ranked for importance in many models, but not in all.

(a) In some models, such as Worldwide and Kaufman's, the first step in needs assessment is to generate a list of goal statements, and to assign priorities to them. In such models the major effort of the needs assessment may be spent in the goal-setting phase, with much involvement of representatives of all sectors of the community.

(b) A second method is for the model to supply a predetermined list of general goals which are broadly applicable. The number of goals varies. The Phi Delta Kappa model has 18 goal statements, the CSE Kit has 106 goals, and the Westinghouse survey is based on 50 goal statements. The Bucks County uses the 10 Pennsylvania goals. Battelle supplies from 85 to 174 "conditions" for four client groups to respond to.

(c) Still a third way is to derive goals inductively as Step 2 of the needs assessment process, after some areas of concern have been identified. In such a model, Step 1 is to identify existing conditions, usually in regard to the school's curriculum areas, and Step 2 is to determine what the goals should be, based on critical need areas, as statements of "ideal conditions" or "what should be." The Fresno and Dallas models are examples of this method. The number of goals varies with the school system.

(d) A fourth method may be considered a hybrid, or two-stage process. In this approach, some general learner and institutional goals are stated, and information is collected to ascertain the present status of each goal. The original goals are then restated in somewhat more specific form as program goals or desired conditions. The goals themselves are not ranked; rather, the discrepancy areas within goals are inspected for highest need. This method is now being field tested in the ACNAM project in California elementary schools (Witkin 1974).

TYPES OF GOAL STATEMENTS

A crucial issue is the type of goal statements used, since this often determines or controls the kind of data collected. The "Our Schools" project of New Jersey recommended the adoption of two sets of statewide educational goals. The first set, termed "outcome" goals, pertains to individual or student behaviors desired as a result of the educational experiences provided. The second set, termed "process" goals, relates to criteria which the public schools of the state, as a whole, should observe in their efforts to achieve the aforesaid "outcome" goals. Process goals are thus related to institutional goals.

Many citizens do not themselves make a distinction between the two types of goals. From the standpoint of the administrative planner, however, it makes sense to separate them, because the planning can be more systematic and reliable when one is not confusing outcomes with processes or inputs.

Examples of outcome goals:

"The public schools should help every person in the state:

"To acquire basic skills in obtaining information, solving problems, thinking critically, and communicating effectively.

"To become an effective and responsible contributor to the decision-making processes of the political and other institutions of the community, state, country, and world."

Examples of process goals:

"The public schools should:

"Insure that all instruction bears a meaningful relationship to the present or future needs and/or interests of students.

"Insure that each student has significant opportunities, consistent with his/her age, for helping to determine the nature of his/her educational experiences."

(A Summary of the "Our Schools" Project 1972, 37-8)

RANKING GOALS FOR IMPORTANCE

Once the goals are chosen, either locally or from prepackaged models, the task is to assign ratings of importance to the goals. The most widely used methods are Likert-type rating scales (e.g., Battelle, IGI, Westinghouse) or card sorts (CSE, PDK). Westinghouse also adds another type of rating--a three-point scale of extent of responsibility of the school for implementing the goal.

2. DETERMINING PRESENT STATUS: "WHAT IS"

MAJOR DATA SOURCES

The two most frequently used sources of data on the present status of the goals are the opinions of different groups--typically educators, students, and parents--and achievement test scores. Other system indicators, such as demographic data, transiency rates, and others mentioned below, are less frequently sought.

Perceptual data. Many widely used models and surveys (e.g., PDK, Westinghouse, Battelle), rely mainly on perceptions of respondents who rate the extent to which goals are being met, usually on a five-point scale of perceived attainment. Employers of the school's graduates, other interested citizens, and college admissions offices might also rate current attainment of goals. Opinions of the public on how well the schools are doing may also be invited without reference to specific goals (Fresno).

Student performance. Typical data are scores on standardized achievement tests, criterion-referenced tests, and grades in school subjects. Others are teacher observations, examples of student "products" or performance (samples of written work), artistic and dramatic productions, science projects, or athletic capability, to name a few.

It is crucial to identify appropriate tests and other measures. The CSE and Bucks County models give guidelines for selection of tests appropriate to each of the goals in their list. ACNAM supplies some guidelines and a statistical summary and data forms package for recording test scores and other objective data.

Student performance data that already exist in school files should be examined before launching a new testing program for needs assessment. But care must be taken to see that the data really relate to the relevant goal or need areas, and that measures used are valid, comprehensive, and appropriate.

Institutional data. Relevant data which are already available in school-site and district records are: demographic data (racial and ethnic distributions, language backgrounds, socioeconomic data, numbers of exceptional students), transiency rates, and pupil health data.

Still other sources are records on library use, types and extent of counseling and other supportive services offered, absenteeism, and trends in budget allocations.

Further sources of information relate to school climate and environment: incidence of vandalism and truancy, complaints of parents, failures to pass school bonds and levies, or concerns expressed to the school board or administration by community action or advisory groups.

Community records. Other sources of information for current and future planning are census data, information from local planning commissions, manpower utilization or projections from the Bureau of Labor Statistics, land use surveys, and data from county or municipal offices, courts, and social service agencies.

Societal concerns. Some needs assessment approaches start from a data base of present or future societal concerns (e.g., Fresno). When these have been delineated, the "needs" are determined by analyzing the extent to which the school system is addressing itself to these concerns. An analysis is then made not only of student performance but also of content of curricular and co-curricular offerings, and relevance of the school's goals to those of society (Worldwide model).

GOAL TYPES AND DATA COLLECTION

We have referred earlier to learner and institutional goals. Although the ultimate focus of the assessment is on the goals of learners, a thorough analysis of the needs (discrepancies) would include an assessment of institutional goals as well.

The important thing to remember in both goal setting and assessing present status is not to confuse the two types of goals or the data appropriate for each type.

To determine present status of learner goals, usually expressed as outcomes, the most valid sources are probably the data on student performance, as well as students' own assessment of their attainment. Social and behavioral indicators relating to the affective and psychomotor domains are also appropriate. Least valid are global ratings by parents or citizens of student attainment on broad, general goals, especially when little or no supporting information is given to the raters.

In the case of institutional or process goals, however, the perceptions of students, teachers, parents, and citizens regarding the attainment of the goals are highly appropriate. In addition, information may be gathered on resources available and in use, staffing patterns, methods of instruction, types of instructional and support activities available, and communication practices and networks.

IMPROVING THE VALIDITY OF THE DATA

The determination of present status can be made more valid by using multiple data sources, not just perceptions or test scores, by careful sampling of the groups participating in the assessment, and by providing background information to accompany survey questions or rating scales.

Sampling. Most models advocate some method of stratified random sampling for participants in surveys or opinion polls, and some give guidelines for selecting samples. Sampling is discussed in models by EPIC, Battelle, Westinghouse, Worldwide, CSE, PDK, and ACNAM. Some community involvement models, such as Fresno's, give guidelines for selection of participants that are not based on representative or stratified sampling.

In a large study done by Battelle's Center, the sampling plan was: (1) draw a random sample from parents of elementary school children to comprise a parent sample; (2) then use these parents to obtain a community sample by having each parent suggest a neighbor of the same sex who does not have children in school.

For the community college survey Battelle developed a sampling plan, similar to the techniques used by the TV rating pollsters and such public opinion groups as the Harris Poll, which would allow a sample of a very small number of randomly selected respondents.

Most surveys given by educational consulting firms use valid sampling techniques. School districts, however, often ignore these considerations when conducting their own surveys. Selection of participants in community conferences should be done on a careful and representative sampling basis.

PPNA guidelines to sampling. Possibly the most complete yet nontechnical guide for use by school-site administrators is the supplement on sampling which is included with the Pupil-Perceived Needs Assessment package (see Chapter 5). Tables and explanations relate sample size to population size, the effects of secondary variables are considered, and detailed steps and overlays take the user through all the necessary stages for drawing the sample. The booklet has exercises, and is thus self-instructional.

Background information for respondents. Survey instruments asking for citizens' perceptions of how well the schools are doing in relation to goals can be made more valid by giving some factual information to the respondents. This was done in the Palo Alto (California) component of Project Redesign, in the 1975-76 Budget Priority Setting Questionnaire.

The Questionnaire lists 25 categories affecting budgeting, such as class size, base allotment, length of day, elementary preparation time, transportation, etc. Each category has a factual description. Examples are:

> Category 4. *Elementary Preparation Team*. We have two teams of teachers who visit grades 4 to 6 each week to provide specialized instruction in music, art, and physical education. While the team is teaching, the regular teacher spends the time developing individualized plans for the classroom.
>
> Category 8. *Counseling*. Counselors work with junior and senior high students and parents in career, educational, and personal counseling. The counselor load is 360 students/counselor. An additional six special counselors deal with problems arising out of drug usage, truancy, or other difficulties.

After the respondents have studied the categories affecting budgeting, they are asked to make judgments. There is an easy-to-follow system of allocating points for imaginary reductions for each of the 25 categories, and asking for the respondents' judgments about where in the budget *cuts* should be made for X number of points, which categories to *protect*, and which to *expand*.

Following that, alternative plans are assessed, based on information regarding the effect of cuts on the schools and approximate decreases in the tax bill of a

$40,000 house. Only then does the respondent rate each curricular area on degree of emphasis to be given, for elementary and secondary grades separately. In the final step, the respondent can add categories.

When asking opinions about how well the schools are teaching reading, information along the lines of the following might be given:

> In grade 4 in School M______, seven hours a week are spent on reading instruction. The average scores on reading comprehension for 4th grade pupils are at the 55th percentile on a nationally standardized test, and are within the expected range of scores for the school district, based upon social, economic, and other factors. Should the school spend more time on reading instruction, less time, or is the time about right?

Another example:

> Here is a profile of what is being done to individualize instruction in the primary grades in your child's school. Does your experience confirm or contradict this?

Research shows that the usual sources of information to parents on what the schools are doing and how well they are doing it are their children, neighbors, and the news media. Very little information comes from school boards or school staff. Parents often have limited bases for judgment. If the major data base in the needs assessment is to be subjective judgments of citizens on the degree to which the school is presently attaining its goals, the validity of the judgments will be enhanced by preceding the goal statements with factual information.

3. IDENTIFYING DISCREPANCIES

The third component is the identification and validation of discrepancies between the goals and the present conditions--between "what is" and "what should be." These statements of discrepancies are the needs, and the outcome of this component is a series of statements about needs.

Discrepancy analysis is said to have at least three characteristics:

> The data must represent the actual world of learners and related people, both as it exists now and as it will, could, and should

> exist in the future.*
>
> No needs determination is final and complete; we must realize that any statement of needs is in fact tentative, and we should constantly question the validity of our needs statement.
>
> The discrepancies should be identified in terms of products or actual behaviors (ends), not in terms of processes (or means).
>
> (Kaufman 1972, 29)

Identifying areas of discrepancy is one thing; quantifying them to make judgments or to assign priorities is another. Methods range from simple equations (e.g., desired performance minus present performance equals discrepancy) to sophisticated and complex procedures using weightings and adjusted scales. Some of the variations are described in Chapter 6.

An important but frequently overlooked aspect of the discrepancy analysis is the investigation of the causes of discrepancies--the reasons for the gaps between where learners are, and where they should be, in relation to goals. In practice, all too often, both professionals and the public tend to make rash judgments about the discrepancies and their causal or related factors, without investigating further. This is particularly true where priorities are set simply by choosing those goals that rate highest in importance and lowest in perceived attainment.

The causes of the discrepancies will lie either (1) within the learners, or (2) within the institution. Information on learner characteristics, experiences, and background will be useful for (1), and institutional or process needs will give data on (2). In fact, the needs assessment might be done in two stages: the first, to assess instructional or outcome needs of the students, and the second, to assess the inputs of staff, program, facilities, and other resources.

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*Most of the differences and diversity in needs assessment models and approaches stem from this statement and from interpretations given to such key words/phrases as "actual"; "as it exists now"; "as it will, could, or should." Who should make these judgments? On what basis? How satisfactory are they for those affected by them?

This method is illustrated in the User's Manual of the ACNAM (Witkin 1974, Chapter 4). The Worldwide manuals also show how to analyze the needs in depth through the concerns analysis, which integrates facts, values, and policies.

A technique which has been developed specifically to analyze "causal" chains in Fault Tree Analysis (see Chapters 6 and 10). After identifying a high priority need area, a Fault Tree Analysis can be performed to indicate the most probable reasons why the need has occurred. The analysis has built-in methods also for indicating the areas in which solutions are likely to make the most impact.

4. ASSIGNING PRIORITIES TO DISCREPANCY AREAS

The final major component is the assignment of priorities to the discrepancies or needs. This component should generate information which is directly applicable to program planning.

In this stage you set criteria to determine when a need is critical, and agree on guidelines for arriving at a consensus on priorities.

As with the identification and quantification of discrepancies, models exhibit a wide range of methods for assigning priorities and ratings of criticality. The simplest compute mean ratings of importance (of goals or need statements), and then rank the goals from the highest to the lowest mean rating. The most complex use decision rules, taking into account the magnitude of a discrepancy, the probability that the need can be met, utility, cost/benefit ratios, and similar factors.

CSE DECISION MODEL

The CSE Kit offers a decision model and decision rule for setting priorities. The model differs from most other methods suggested to determine criticality of need, in that it takes several components into consideration, and does not rely on a simple mathematical discrepancy between ratings of importance and attainment.

The decision rule is:

> Plan to revise the instructional program in the goal area(s) that has (have) the highest priority value(s). The priority value is based upon:
>
> 1. The rated importance of a goal area
> 2. The utility of improving student performance
> 3. The probability of improving student performance.
>
> (Hoepfner and others 1972, 76)

The current level of student performance is derived from standardized tests directly related to the goals. This level, expressed as a differentiated school percentile, is used to arrive at a figure for probable increase in utility, in each of the main goal areas. The formula used is:

Priority value = Rated importance x Probable increase in utility

Although this method is more complex than that of most other models, it is probably more exact. The guidebook in the CSE Kit gives explicit directions for its use.

GRAPHIC COMPARISON METHODS

Two studies illustrate how you might assign priorities by relating goal importance to goal attainment in graphic form.

An assessment of educational television needs in Maryland used a mathematical model (Hershkowitz 1973). First, mean scores of importance and mean scores of attainment established a Cardinal Rank and Criticality Index. A goal area became a critical educational need if it met two criteria: (1) its mean score of importance must be greater than the overall average importance score, and (2) its mean perceived extent of attainment must be less than or equal to the overall average attainment score.

Analyses were made separately for each client group. Priorities were given to those goals to which four or more groups assigned a critical need. Figure 4 shows the criticality function of four goals for the school staff respondent group.

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Insert Figure 4

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A statewide public opinion survey in New Jersey produced ratings of 16 outcome goals on scales of importance and excellence. Figure 5 shows how the two ratings were compared. In this method, the goals are plotted on two axes as in the Maryland study, but are not related to group mean scores. The vertical axis shows the percentage who rated each goal "very important" and the horizontal axis shows the percentage rating each goal's attainment "good" or "excellent."

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Insert Figure 5

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Those goals falling in Quadrant I have top priority for program efforts. Those in Quadrant II would be recommended for continuing the present good efforts (Opinion Research Corporation 1972).

In the final analysis, however, evidence of the priorities given to the needs and the significance attached to them are usually evident in how school budgets are revised to provide resources for meeting the most critical needs. The outcome of the discrepancy analysis is presumably a plan for action, with objectives specified and resources committed to their attainment.

VALIDITY AND COMPLETENESS

COMPOSITE NEED STATEMENTS

In the Introduction to this study it was pointed out that a need is not the same as a wish, or a solution, or a goal. If the needs assessment process takes account of all the major components discussed here, the needs will be clear statements of discrepancies. Otherwise, they will not be valid.

Examples of statements which are not correctly stated as needs are:

"There ought to be better communication between counselors and parents."

"Children should have more individualized instruction in science."

"Reading scores in grades 2 and 3 in this school are too low."

"There is inadequate cooperation between the home and the high school."

Here is an example of a composite need statement which reflects the results of all components in the assessment. A goal of reading comprehension has already been determined to have high priority:

> When reading, pupils will be able to comprehend and recall the content of written materials, ranging from simple recall to inferential comprehension.

The need analysis is for grade 5:

> Existing condition ("what is"): On the reading subtest of the CTBS, 70% of project pupils fell below the 50th percentile on the norm-reference group, and 50% below the 20th percentile. Teachers report that the majority of their pupils have difficulty decoding and reading without assistance, and understanding content read. Only 35% of pupils report "I understand what I read" and 60% of their parents report that the students understand what they read "only a little" or "not at all." (Source: test scores and teacher, pupil, and parent surveys.)
>
> Desired condition ("what should be"): Fifth grade pupils should be able to read and comprehend written materials appropriate for their age and experience, from simple recall to inferential comprehension. This implies that scores on a standardized test will approach a normal distribution for the pupil population, and that reports from teachers, pupils, and parents will confirm this.
>
> Discrepancy: Compared with the normative group of the CTBS, 20% too many pupils are below Q_1 and 30% too many are below Q_2 on reading comprehension. This discrepancy is confirmed by parent, teacher, and pupil surveys.
>
> Analysis of discrepancy: No diagnosis is made to determine learner's strengths and weaknesses. Materials are inappropriate to performance level of pupils. Staff lacks understanding of how to meet individual differences in reading.
>
> Program objective: By May 1976, scores in reading comprehension of 5th grade pupils on the CTBS will reflect a distribution such that 60% or fewer will fall below the standardized Q_2 of the norm-reference group, and 35% or fewer will fall below Q_1. Also, 80% of the teachers will report that at least 50% of their pupils can decode and read without assistance, and 60% of parents surveyed will report that their children understand what they read "a fair amount" or "a great deal."

(ACNAM User's Manual 1974, 56)

The discrepancy analysis thus defines the need and sets forth priorities for program changes and staff development.

THE GIGO PRINCIPAL

There is a classic saying from system analysis and computer technology--"garbage in, garbage out." The outputs from the needs assessment will be no better than the inputs. If the process is carried on in such a way that the respondents are not really representative of the educational partners, or do not understand what they are doing, or the questions asked of them cannot really be "answered," or the data collected are invalid, or the data analysis is inaccurate or based on faulty assumptions, the information gathered and the decisions made will be worse than useless.

CHAPTER 5

COMPREHENSIVE KITS, INSTRUMENTS, AND MODELS FOR LOCAL ASSESSMENT

This chapter offers descriptions of selected needs assessment approaches suitable for the school or district level. Although they differ in many details, they are similar in that they are intended to perform a broad-based assessment, rather than one in a single curricular area. They are presented in alphabetical order.

The models included here were chosen because they offer specific guidelines and published materials or manuals for the practitioner rather than general theory. Most of them have been widely used. Appendix A lists publishers and prices of materials. Chapter 9 gives case histories illustrating applications of some of the models.

A section at the end of this chapter is devoted to a brief description of some projects which have put needs assessment in the context of future planning.

PRACTICAL MODELS AND SURVEYS

ACNAM

The Alameda County Needs Assessment Model was field tested during January-June 1975 in some 510 elementary schools in California, with approximately 88,000 pupils, teachers, parents, and school staff participating. Evaluation of the procedures and instruments will be published in late 1975.

The model consists of six preprinted surveys, two packages of statistical summary and data forms, and a user's manual. The surveys are designed for teachers, parents, elementary school pupils, and administrative and support staff. Responses are put on optical scan sheets; data processing services are available. The parent survey is published in English and Spanish, and the pupil survey has a readers' and nonreaders' (picture) version.

The context for the model is a general system approach. The surveys gather specific factual information on pupils' knowledge, skills, and attitudes in reading, language development, mathematics, and multicultural education. Questions for parents and school staff relate to input and process variables supporting the instructional areas, as well as needs for a bilingual education program, health and counseling services, and staff and parental in-service.

Survey questions are based on three outcome goals for each instructional and support area. Goals and questions may be modified locally. The survey data are synthesized with standardized test scores and statistical and demographic data to arrive at (1) program goals, (2) discrepancy statements, (3) analysis of causes of discrepancies, (4) objectives, (5) activities, and (6) time lines in instructional and support components.

ACNAM was developed to assist elementary schools in California to assess needs as the basis for applications to the state educational agency for consolidated funding. The instruments, however, are applicable elsewhere, particularly the teacher and pupil survey forms. Although ACNAM is a discrepancy model, it does not rank goals for importance, since the requirements of funding sources have already set priorities for general curricular areas. Discrepancy analysis is based on multiple data sources for "what is," not on people's perceptions of goal importance and attainment.

Battelle

Battelle's Center for Improved Education has developed a set of needs assessment surveys for local school districts, suitable for secondary level.

Four preprinted questionnaires, designed separately for parents, students, staff, and the community at large, contain varying numbers of statements of conditions about schools drawn from a master list of 174 items. The items, including both learner and institutional variables, are based on 16 functional areas of a model school system, and a philosophy of participative management. The areas are:

> Personal development of the student, educational program, individualizing instruction, instructional management, guidance and counseling, managing auxiliary programs, formulating policy, planning, innovating, communicating, supervising, solving problems, staff development and board orientation, managing facilities, resources, budgeting, and evaluation.

Participants in the assessment are chosen on a stratified random-sample basis. Respondents rate each statement of conditions on two five-point scales--one for their perception of the extent to which the condition actually exists, or of the "actual state" (A); and one for their perception of the extent to which the condition should exist, the "desired state" (D). A need index for each goal statement is the numerical difference between the two scale values, A and D. The need indices are then arranged in order of magnitude to show the rankings of the goals.

Battelle's instruments were derived from surveys of needs assessment materials and the literature on educational theory. The questionnaire items were revised after review by researchers, educational consultants, faculty, students, and community groups.

Battelle will furnish computer printouts which display distribution of scores and need index for each goal by groups, the percentage of responses for each goal by groups, and the percentage of responses for each point on the scale for A and D values, as well as mean responses.

Bucks County

Bucks County Public Schools (Pennsylvania) has produced instruments for the statewide Quality Education Program Study of Pennsylvania that could be used in any elementary school.

The model consists of a set of small booklets: a general needs assessment instrument, based upon the 10 goals for quality education in Pennsylvania, and 10 specific instruments, one for each of the goals. The goals, which have been widely adopted or adapted outside of Pennsylvania, are self-understanding, understanding others, basic skills, interest in school and learning, good citizenship, good health habits, creativity, vocational development, understanding human accomplishments, and preparation for a world of change.

The general instrument (Booklet B) can be used by parents, students, teachers, or administrators. It contains the 10 goals and several sub-goals or indicators for each, all of which are rated on a five-point scale of importance. Ratings can be done on a paper-and-pencil scale, or by a card sort. The total points of all ratings are used to determine priority areas.

The individual instruments, one for each goal area, are self-assessments to be done by pupils, who rate themselves on a number of specific behavioral items on a five-point scale of frequency (how often the pupil does the action or exhibits the trait).

An example of the way the general and individual instruments are related: Goal 2 is "understanding others." Area 1, rated by different groups for importance in the general instrument is, "works with or helps people different from self." Two specific behaviors for Area 1, rated by pupils for frequency are, "has a friend who is different in some way from himself," and "stands up for another even though he is of another race." Many other statements of this level of concreteness are included for each area of each goal.

There is a separate booklet for each goal area, and each includes an analysis of published tests suitable for that goal area, with the title, form, publisher, date, grade level, brief description, and bibliographic notation. The tests were chosen after a research study determined their appropriateness, but are not evaluated for quality.

Distinctive features of the Bucks County model are: (1) its statements of goal areas and behaviors were derived from an empirical study using the Critical Incident technique, (2) the 10 goal areas are clearly maintained as a structure for the general and specific instruments, (3) pupils do a self-assessment, and (4) appropriate tests are listed for each goal. The specificity of the statements to be rated no doubt increases the validity of the judgments.

The management structure is left up to the local district. It is not clear how the ratings from the general instrument are to be related to the ratings from the individual instruments, or if they are to be related at all.

CSE Kit

The CSE/Elementary School Evaluation Kit: Needs Assessment consists of a guidebook and a box of materials containing principal's goal rating forms, 10 decks of 106 goal cards, 10 sets of rating mats, 50 rating forms, and 48 parents' goal rating questionnaires. Replacements can be ordered.

Research information on the model, which was field tested in a national sample of 79 schools and a California sample of 100 schools, is available in a report (Hoepfner and others 1971). The model was developed within the framework of evaluation.

The school principal directs the process, which is in four steps:

1. Gather information on goals the school should be meeting.
2. Select tests to measure student performance on highly rated goals.
3. Interpret the school's test scores in relation to those of other schools with similar characteristics.
4. Use a decision model to transform the information already gathered into a set of critical need areas for the school.

For Step 1 there are statements and descriptions of 106 goals in 41 areas. Goals are rated for importance on a five-point scale by questionnaires or card sorts.

For Step 2, a comprehensive list of tests is furnished, specifically related to each goal area and sub-goal, with a rating of each test according to four criteria (the MEAN test evaluation): Measurement validity, Examinee appropriateness, Administrative usability, and Normed technical excellence. The ratings are based on extensive analyses of published tests for elementary and secondary schools undertaken by the Center for the Study of Evaluation at the University of California, Los Angeles.

For Step 3, there is a table of differentiated school norms and six correction factors. Values based on these factors are coded and then added or subtracted to the national norms of standardized tests to derive corrected norms for the school, for grades 1, 3, 5, and 6. The correction factors are family occupation, racial composition, geographical location, transiency, numbers of non-English-speaking students, and role of teachers in initiating new educational programs. Examples are given of the step-by-step process for coding and finding the school norms.

For Step 4, a decision model and decision rule are offered to set priorities. This was described in Chapter 4.

Dallas

The Dallas (Texas) model is used as part of the annual budgeting process. The first step is not the ranking of goals, but the determination of high priority need areas. Within the budget cycle, evaluation and needs assessment precede goal determination. A survey instrument listing areas of instruction, classroom operation and management, services for students, school management, and development services is used to obtain individual judgments of present and desired conditions. The survey uses 15-point rating scales. Outputs show the rankings or priorities desired by principals, teachers, parents, and students; the areas of greatest difference between perceived present and desired conditions; and composite rankings of priorities and greatest difference areas.

The Dallas model involves the Board of Education, program managers appointed for each of the district's seven long-range priority goals, and a 600-member committee which includes teachers, students, parents, other citizens, principals, central office staff, and representatives of all district employee groups.

Program managers evaluate the accomplishments of ongoing programs in the light of the previous year's goals or of long-range goals, and report to all individuals involved. Smaller 24-member committees meet monthly to focus on various areas of the school program. Information from the needs assessment survey is used together with all other data in arriving at priorities for planning.

Representatives of all the small groups meet with the Board at its first weekend retreat on the budget to respond to and revise compiled needs. Based upon the identified needs and the gaps which represent greatest discrepancies between actual and desired status of programs, the program managers select goals to be worked on during the year.

Educational System Associates

This organization has issued a manual which gives guidelines, procedures, and a case study on conducting a needs assessment. Based on accountability, the design uses three types of measurement: a survey of perceived needs, an analysis of secondary sources, and the direct measurement of existing status. Both learner- and process-oriented goals and objectives are included.

The goal-ranking instrument provides for discrepancy ratings on the 10 goals of the Arizona needs assessment program. A public opinion survey instrument used in the Merrill (Wisconsin) Public Schools in included. A sample case study illustrates the application of the method to an ESEA, Title I program, gives information on sampling and data collection, and reports the results of the four phases of the study. A distinctive feature is a list of examples pointing out limitations of the study.

Fresno

The Fresno (California) model has been widely implemented in California schools. Like the ACNAM and Dallas models, it does not begin with the generation or ranking of goals. The heart of the Fresno model is a conference which considers two questions: "What are the things which are keeping our school from doing the job it should do for the students?" and "What are the things our school should be doing for the students of this community?"

Figure 6 shows the relationship of needs assessment in the Fresno model to educational planning and the cyclical nature of the process.

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Insert Figure 6

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The statements of concerns and "shoulds" are generated at a one-day community conference, usually with about 100 people. Parents, teachers, and students participate through interactive small groups, each table of five or six generating its statements and passing them to other tables for priority rankings. The procedure is repeated four or five times. Statements are later sorted into categories, and those which achieve overall high numerical ratings are used as the basis for stating program goals. From this point a steering committee proceeds with a general system analysis approach, breaking the goals into objectives and planning programs to meet them. Figure 7 illustrates the steps in the model. A filmstrip, audio-cassette, and manual illustrate the entire procedure in simple steps (Jordan 1973).

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This model, relying mainly on the community conference and follow-up meetings by parent-teacher-student committees, provides no predetermined sets of goals nor packaged instruments. It does not analyze discrepancies in a mathematical sense nor validate community perceptions through "hard data." In practice, however, steering committees tend to refer informally to standardized test information already available to confirm or dispute statements made at the community conference.

Phi Delta Kappa (PDK)

This model, developed at the Northern California Program Development Center, Chico, is distributed nationally through 23 training and dissemination centers of Phi Delta Kappa.

PDK has three phases: (1) rating goals for importance and degree of attainment, (2) setting objectives based on the high priority rankings, and (3) developing performance objectives and plans for implementation. Manuals and goal-sorting materials are contained in workshop packets for Phase 1. Most of the districts now using the model appear to be in Phase 1, or are gearing up for Phase 2, for which a manual on writing objectives is available. An estimated 10,000 people have been trained to use Phase 1 of the model at the training centers.

Figure 8 is a flowchart of the PDK model.

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The goal rating process uses a type of card sort, with active involvement of educators and citizens individually and in small groups. Eighteen goal statements with descriptions are provided on individual cards and rating sheets. Colored discs and a game board are used with the cards in a semi-forced-choice procedure, which results in group ratings. Each goal is assigned ratings of importance on a five-point scale, and the data are displayed to show the judgments of different client groups. Instructions are given for assigning criticality ratings.

Goals are also ranked independently, using the card-sort process, by a representative community committee. Consensus rankings are arrived at in small group sessions. Committee members then rate how well the current school programs are meeting each goal, on a 15-point scale. Average (mean) scores for each goal are derived, and criteria are furnished for interpreting the data.

Schools have the option of adding other goals, but in practice they rarely do. In this model the emphasis is on assigning priorities to goals, and on involving the professional and public community. The "needs" are the high priority goals. There is no provision for integrating test or other objective data with those goals to arrive at a discrepancy between "what is" and "what should be," or to validate the perceptions of the raters as to how well the current educational programs are meeting the goals. The discrepancy data are based solely on the judgments of those involved in the assessment.

Pupil-Perceived Needs Assessment (PPNA)

Research for Better Schools, Inc., a regional educational laboratory in Philadelphia, has issued a kit which gives educators explicit instructions on how to develop need indicators and to conduct an assessment of needs as perceived by pupils. The methodology is suitable for any grade level.

The kit consists of a box containing a tape cassette and six booklets--planning a PPNA project, developing a PPNA indicator, administering the indicator, processing indicator data, analyzing and reporting results, and a supplement on sampling. The booklets are well organized, easy to read, and explicit.

The PPNA is unique among needs assessment kits in that it gives step-by-step instructions for local educators to develop their own indicators of pupil needs. Simple checklists and criteria help the administrator or teacher decide on the type and length of indicator and method of development; formulas and steps are provided for estimating personnel time and costs.

Westinghouse

A preprinted survey questionnaire for secondary schools is available from Westinghouse Learning Corporation. It consists of 50 general goal statements, with descriptors, which are rated separately on three different scales: (1) a five-point scale of importance, (2) a three-point scale of adequacy of attainment, and (3) a five-point scale of judgment of the school's responsibility for the goal. All statements are worded in terms of student skills, knowledge, or attitudes. Three general opinion questions are included on institutional and environmental factors affecting the school's performance.

The one instrument can be used by various client groups, such as community and educators, with separate analyses made of their responses. Districts may also use the three-way model to develop a custom-made instrument.

The model, now in its third edition after field review, was developed in cooperation with the Measurement Research Center at the University of Iowa.

The following formula is used to arrive at priorities:

$$\text{Priority ranking of needs} = \frac{\text{Importance} \times \text{Responsibility}}{\text{Attainment}}$$

Reports provided are: summary rankings of goals according to needs, with comparisons among client groups; profiles of ranking of goals; and separate rankings according to importance, needs, and school responsibility for each respondent group.

The Battelle and Westinghouse surveys, although on the surface somewhat similar, differ in the derivation and focus of the goal or condition statements, the types of judgments to be made, and the calculation of need indices and bases for assigning rank or priorities. They are alike in that they determine the discrepancy between "what is" and "what should be" entirely through the opinions of the respondents.

Worldwide

The Worldwide model, developed as Project Next Step (Eastmond 1974), has been widely used at both local and state levels. Materials available are a needs assessment source book, 10 manuals keyed to a master flowchart, and a filmstrip/audio-cassette orientation. Although the assessment could be conducted without consultant help, in practice, many districts, state educational agencies, and multi-state or regional entities use the services of the Worldwide Educational and Research Institute in planning the assessment, developing instruments, and processing the data.

The Worldwide model furnishes a complete guide for a system approach to needs assessment and program planning. It can be adapted to any grade level or size of system.

A central feature of the model is the use of "concerns analysis." This is a method for integrating perceptions and judgments with test scores and other objective data, to arrive at a consensus on need areas. Detailed instructions are given for comparing facts, policies, and values to arrive at statements of validated needs. Widespread involvement of the educational and larger community, individual and group judgments of various kinds, and systematic progress through each stage are characteristics of the model.

Worldwide provides flowcharts for each stage, specific guidelines and alternative methods for implementation, examples of instruments, and management through a quality assurance committee. It does not supply off-the-shelf sets of goals or questionnaires and other instruments.

A master flowchart of the entire process is shown in Figure 9. Detailed flowcharts of each stage in the assessment are included in the 10 manuals.

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Insert Figure 9

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SERVICES AVAILABLE

Many models can be used without external consultants; others depend on consultant help for management, data processing services, training sessions, or instrument development. Battelle, Educational Systems Associates, Westinghouse Learning Corporation, and Worldwide, for example, offer such services on a fixed-fee basis or for consultation fees plus costs of materials, data processing, and other materials and services needed. The experience of many school districts and state educational agencies indicates that it is often worth the cost to retain a consultant to assist in managing the process, particularly when prepackaged instruments and procedures are not available. A list of management consultants, individuals, and groups who offer needs assessment, planning, and evaluation services has been published in a directory by Western Educational Services (Resources for Educational Planning and Management 1974).

Workshops are available for the PDK, CSE, Worldwide, and Fresno models. Kaufman and the EPIC group also offer workshops and consultant services of various kinds to implement their general models, which are tailored to the specific needs of the client.

MODELS OF FUTURING AND THE FUTURES CONCEPT

The models and procedures discussed thus far are directed to assessing current needs. Another approach to needs assessment, however, is to project what society will be like 20 or 30 years from now, and to use these possible future needs as the basis for present planning.

In the last decade there has been a heightened interest in methods of predicting the future. Elaborate studies have been undertaken, some using the Delphi technique, to predict what the world will probably be like around the year 2000.

Recently educators have begun using various futuring techniques with citizens and planning committees not only to predict what might occur, but to dream up alternative futures with their probable different consequences.

Educators have not had much experience in using futuring materials at the local school level, and there has apparently been no real research to describe or measure the effect of futuring activities in school districts.

Here are descriptions of four projects that have been assessing needs with an eye on the future.

Atlanta Assessment Project*

This project, now in its third year, was designed to answer two questions: (1) What will young people in the Atlanta area need to know, be able to do, and value, in order to be able to cope successfully with life in 1985 and thereafter? (2) Where are young people in the Atlanta area today in achieving these things? (Sweigert 1973)

The project established 21 educational goals for 1985 through a series of Delphi studies involving nearly 1,100 community leaders, educators, and students. Specific objectives were developed to define each goal, and tests were constructed to measure those objectives.

Tests will be administered to a sample of high school seniors, 17- and 18-year-old students at lower grade levels, and 17- and 18-year-old non-students, both graduates and dropouts of the Atlanta system. Assessment results will then be used to make administrative and instructional decisions to improve education.

In this project, the definition of "what should be" is the minimal level of skills, knowledge, and attitudes considered essential for successfully coping with life in 1985. Both the self-fulfillment of the individual and the person's functioning as a member of society are taken into account.

This project may be unique in that it combines futures techniques for establishing goals, with the construction of tests specifically designed to measure the status of objectives which define those goals.

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*Information on the project may be obtained from Dr. Ray L. Sweigert, Jr., director, Atlanta Assessment Project, Atlanta (Georgia) Public Schools.

Project Redesign

The Palo Alto (California) Unified School District has undertaken a massive study engaging the schools and the community in planning for changes in the schools. The project used a variety of techniques--written surveys, interviews, futuring, and a budget priorities study, among others. Several summaries, mini-reports, and technical papers have been published. The project has a research as well as an operational component.

The needs assessment covered opinions on major curricular issues; teaching methods; issues in student growth and development; programs to meet special needs; attitudes toward the school district, teaching staff, and community; attitudes on selected issues; and relationships with teachers, counselors, and administrators.

The Futures Task Force took on two tasks: (1) to search the futures literature for relevant descriptions of "whole" alternative futures and for various issues and isolated predictions that would affect the future, and (2) to write a number of plausible issues, predictions, and future scenarios of its own.

The Task Force concluded that each person must struggle with the future and experience its implications in his/her own way. Therefore the project designed experiential exercises and training aids, so that participants might "shape their own visions of the most likely and the most desirable futures that could be considered in educational planning." (McCollough and others 1974)

The publication on futuring by McCollough and others includes the Palo Alto case study in educational futuring, a bibliography, script and visuals for a tape/slide presentation, instructions for simulations and scenarios, synopses of three scenarios for the future, future issues facing education, facts and trends with relevance for educational planning, and a section on values clarification in planning.

The heart of the project is 10 planning teams, which have operated like commissions, studying the district with the future in mind. At the present time, the results of the 10 teams' studies are being analyzed for recommendations on decision making, organizational structure, human relations and resources, educational priorities, and fiscal constraints.*

Project Simu-School

Simu-School grew out of the work of a committee for education of the American Institute of Architects, which saw the need to bring to the educational community the same type of planning tools as are used in government and industry. It was funded as a network of components to develop techniques which would assist schools in planning efforts (Burr 1971). Components are in Chicago, Santa Clara County (California), and Dallas.

The major emphasis is on computer applications for handling data and predicting the effects of decisions which are made and alternatives available. Each component has developed specific tools, and position papers on aspects of educational planning are available.

The Santa Clara County component has developed models and issued reports on goal analysis procedures, designing future forms of educational facilities, organizing and planning for educational change, planning a career development center, housing patterns, residential and educational isolation and its influence on affluent youth, and a bibliography on educational planning, among others (Garman and Northall n.d., Candoli and Leu n.d.).**

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*For information on publications, write Tom McCollough, director, Project Redesign, Palo Alto Unified School District, 25 Churchill Ave., Palo Alto, California 94306.

**Information on publications may be obtained from Dr. Lester W. Hunt, director, Office of the Superintendent of Schools, Santa Clara County, San Jose, California 95110.

The Santa Clara County component has also provided consultant assistance to the Futures Task Force of Project Redesign, and published the significant documentation of their work referred to earlier.

Project SWEP (Skyline West Educational Plan)

This project was created by the Dallas (Texas) Independent School District to determine what a secondary school should be like in the decades between 1980 and 2000, and to provide a kind of universal model for the school of the future for the Dallas-Fort Worth "metroplex." The problem was to determine what the society of those two decades would be, then to design a curriculum to meet that society (Skyline West Educational Plan, October 1974).

The needs assessment stage used a variety of techniques. Data were gathered and synthesized on student population trends, metroplex manpower needs, facility and site considerations, and analyses of the future society. Political, legal, and demographic facets of a multi-district schooling venture were considered. Forecasts of student enrollments, ethnicity of the population (including analyses of fertility and birth rates), "holding power" of future schools, and forecasts of pupil and family metroplex socioeconomic status were included.

Research methods used were a survey of the literature, a futures survey, two Delphi studies, on-site inspection of facilities, and personal interviews.

A conceptual model of a future school and planning specifications for its implementation were evolved, and the model was applied to a hypothetical school site to test its logic. It was concluded that the model would probably have universal applicability.

CHAPTER 6

SPECIALIZED INSTRUMENTS AND TECHNIQUES

In addition to the comprehensive models and surveys, there are instruments to assess needs in specific areas. This chapter describes some of them, as well as some special data-gathering or analysis techniques.

INSTRUMENTS FOR SPECIFIC AREAS

In this section you will find instruments suitable for needs assessment of specific curricular areas or for specific purposes. Appendix B contains information on authors and publishers.

ATTITUDE ASSESSMENT

Norbar Attitude Assessment Survey. This survey is designed to gather information on the expressed feelings of students in grades K-8. It contains a standard list of 36 items, assessing attitudes toward reading, mathematics, school, and the self. An item bank is also available so that items from other areas can be substituted and the survey can be tailor-made for the local situation. Items in other lists include attitudes toward such matters as oral expression, health, art, room environment, careers, social science, student body organization, and audiovisual resources.

All items are phrased in the positive, most of them starting with "I like" or "I would like." Preprinted forms and optical scan answer sheets, on which faces with three different expressions are to be marked in multiple-choice fashion, can be ordered.

Student Opinion Inventory. A short student opinion inventory suitable for secondary schools is offered by the National Study of School Evaluation. It consists of 34 questions with multiple-choice answers and five open-ended questions, assessing student attitudes toward faculty, administration, students, curriculum, instruction, school participation, and school image. The inventory may be hand scored, or machine scored by using optical scan sheets. Information is provided on administration, scoring and interpretation, and reliability and validity data.

CAREER EDUCATION AND COUNSELING

Assessing career needs of learners. A learner-based needs assessment for the 8th grade was developed by the Northwest Regional Educational Laboratory in Portland, Oregon. It includes career education, basic education, and special education. The instrument is in a bound pamphlet, is formatted attractively, and uses language appealing to 8th grade students.

Section 1 presents a list of 20 career areas from which students make judgments about what they would most like to do (High in the Sky), what they plan to try for, and what they expect to do. Section 2 assesses attitudes toward friends, teachers, and administrators, and how students perceive the expectations that others have of them. In Section 3, students mark on a six-point scale their degree of agreement or disagreement with statements about the school library, their interests, and various attitudes toward self, schools, careers, marriage, parenthood, and being a citizen. It also assesses their levels of knowledge about items related to careers.

Priority Counseling Survey. The Priority Counseling survey has been used to assess needs for improving guidance services in California schools. Over 55,000 students in grades 6, 8, 10, 12, community colleges, and adult education were surveyed.

The survey has 25 items in which students select options from lists of 6 to 12. Questions relate to what areas students do their best work in, where they need the most help, their hobbies, their sources of information on abilities, and interests. Questions on favorite school subjects, leisure time, and career planning are included. Five optional questions may be formulated by the survey administrator to obtain additional information on guidance, extracurricular activities, or the curriculum.

The Survey also provides a list of occupations organized into 12 career clusters, and the students select occupations about which they wish to have more information. Thus the survey data can be used directly by counselors and career information specialists in planning programs of career education.

MULTICULTURAL EDUCATION

The instruments described in this section were developed for evaluation purposes, not needs assessment. Nevertheless, they would be useful in probing into student and staff attitudes and other needs related to multicultural education, either as content or as part of school climate.

Evaluation Guidelines for Multicultural/Multiracial Education. Two short opinionnaires, one for students and one for teachers, published by the National Study of School Evaluation, may be used to assess needs in multicultural educa- in secondary schools. The publication contains guidelines and checklists for evaluating an existing multicultural program in the school. The two opinionnaires may be ordered separately.

PRIME. Program Research in Integrated Multiethnic Education was developed and extensively field tested in a three-year research program at the University of California, Riverside, to assist school districts in evaluating the extent to which desegregated elementary schools are achieving an integrated educational program. The information can be used to assess status in developing an integrated school and to chart changes over time.

PRIME consists of a model of cultural integration, questionnaires, and a computerized program which prints out school- and district-level profiles. The target group is the elementary school, not the individual child.

The procedures used in PRIME are appropriate only for desegregated schools, which are operationally defined as having a minimum of 10 children in at least two different ethnic groups enrolled in the grades selected for the sample. The assessment is done at grades 3 and/or 6. The procedures cover two aspects of the integration process: cultural integration and structural integration.

Data gathered are teacher ratings of pupils, pupil self-assessment, and statistical information. Publications include a training manual for data collection and a technical manual containing reliability and validity data.

For each participating elementary school, the district receives a comprehensive profile of that school on individual measures, a summary profile of each school on six dimensions, and a district aggregate of data. Districts can use cross-sectional data, or repeat the needs assessment annually for a longitudinal study. The data can be applied directly to planning multiethnic programs.

It is not known at this time whether or to what extent the PRIME model can be used in the future outside of California, since the funding for the research has ceased. Present indications are that districts outside of California would not be able to use the model unless the data could be furnished to the University for research purposes. Consultants from PRIME staff would have to train the local liaison person, and all data processing would be done at the University of California, Riverside.

PSYCHOMOTOR ASSESSMENT

The Kephart Glen Haven Achievement Center, in cooperation with a task force of the Virginia State Department of Education, has produced a psychomotor screening instrument that may be used by classroom teachers at the early elementary level to identify suspected deficiencies in psychomotor functioning. It has been pilot tested with children in kindergarten through grade 4 and in special primary classes for the educable mentally retarded (Psychomotor Needs Assessment of Virginia School Children 1973).

The instrument is a checklist or inventory of behavioral characteristics. Teachers respond to 23 questions which are associated with five different psychomotor functions of the child: internal organization, subdued activity, vision, overflow, and fine motor control. The instrument is reported to have high reliability.

The published study gives extensive research information on the instrument as well as on the Purdue Perceptual Motor Survey. Psychomotor abilities of children on a statewide stratified sample were analyzed by using a number of geographic and demographic variables.

The psychomotor domain is a complex integration of many functional processes. Children must be able to organize themselves in relation to their environment and to monitor and organize this interaction within a time-space framework. The Virginia instrument shows how to assess the deficits in the processes of interaction between the learner and the environment more accurately than is usually done.

READING

NAP. The national Right to Read program has developed a Right to Read Needs Assessment Package to evaluate program, personnel, and pupil achievement in its school-based centers. The NAP provides guidelines for an in-depth investigation suitable for any grade level or content area. Right to Read offices in state educational agencies generally have this material and supplementary manuals on hand, and may furnish copies on request.

SCHOOL CLIMATE

School Problem Area Survey. The Human Resources Research Organization has published a manual which contains two questionnaires for surveying mental health problems in schools. One is for teachers and one for staff. The manual includes an interview guide for gathering demographic information on the schools from the principal, discussion of the rationale for the questionnaires, directions for using the instruments, reliability and validity analysis, and directions for tabulation of the data (Taylor and others 1974).

The instruments give a measure of school climate.

In the questionnaires, staff and students classify a list of potential problems on a six-point scale. Some items are: "The way the principal gets along with students"; "the amount of influence student opinion has on the way the school is run"; "lack of community interest in the schools."

The instruments were developed to be used in planning indirect services of a mental health facility in a school setting. However, they could assist a school principal and staff to assess the climate and mental health needs of the school, identify the most salient problems, and seek aid using resources of the school system, or call upon outside consultants to assist in solving the problems. The data may also form the basis for developing special programs for groups of students, such as potential dropouts or drug users.

SELF-ESTEEM

Funny Faces Game. This early childhood self-esteem inventory was developed at Operations Research, Incorporated. The game is an inventory of attitudes, feelings, and perceptions related to the situations and personal relationships that are commonly most important in the lives of children from ages four or five through primary grades.

The instrument consists of a set of four color-coded cards with three faces on them, each set showing the faces in a different order. One face is smiling, one has no expression, and the third is a frowning face. The inventory is administered individually to each child. Children are given practice in discriminating the three faces on the cards and the teacher then reads 20 items. They respond to each item by pointing to one of the three faces on a card, indicating how they feel about the subject of each item.

Examples of items are:

"Point to the face that shows how you feel about playing with toys."

"Point to the face that shows how you feel about putting on your shoes in the morning."

No information on field testing or norms was available from the publisher.

SPECIALIZED PROCEDURES

Here are some procedures found in various models which are useful for generating or ranking goals, for setting priorities, or identifying critical need areas. They can be used with or without discrepancy analyses. Advantages and disadvantages are summarized in Table 2, Chapter 12.

CARD SORTS

Many models use some type of card sorting to assign priorities to goals or to statements of needs. In this method, lists of goals or needs statements are placed on cards, one statement to a card. Individuals or small groups are then asked to sort the cards according to their order of importance.

Materials for this method are (1) one set of goal cards for each individual or separate group, and (2) one set of priority cards. The CSE Elementary School Evaluation Kit, for example, uses five large cards with these labels: 1, Unimportant/Irrelevant; 2, Marginally Important; 3, Average Importance; 4, Moderately

Important; 5, Most Important. Goal card packs are randomly shuffled and each goal card is placed on one of the Importance cards until all have been sorted.

Each group using the card sort tallies its goals, and the aggregate weights from all groups are derived. Results of the card sorts by various groups, such as students, parents, and the general community, may be compared.

Different versions of the card sort are used in the TARGET model (see Delphi below) and PDK; it is optional in the Bucks County model. Participants usually find this an interesting way to make judgments of importance, and to share in discussion about priorities.

CRITICAL INCIDENT TECHNIQUE (CI)

The Critical Incident technique was formulated by Flanagan (1954) to identify critical factors in human performance in military situations. At the American Institutes for Research, which he established in 1946, the technique is used to solve practical problems in industry, education, health, and community service (Fivars 1973).

CI is a set of procedures for collecting direct observations of human behavior--any observable human activity where the purpose or intent of the act seems fairly clear to the observer. When used for needs assessment, educators, students, and/or parents might be asked to recall a specific event or condition, observed recently, which makes them feel that something about their educational system needs improving. Incidents may be favorable, as well.

CI has been used to identify needs in several school districts in California and Nevada (Campbell and Markle 1967), and procedures have been developed to collect, categorize, and analyze critical incidents.

The Critical Incident technique can be used by itself or in conjunction with other methods. The Fresno model uses a modified CI approach in its one-day community conference, described earlier. The Newport-Mesa (California) School

District, possible the first to use CI in needs assessment, used it in the framework of a general system model. Behaviors were collected indicating (1) what the schools were doing that showed they were doing an *unsatisfactory* job, and (2) what the schools were doing that showed they were doing a *satisfactory* job. Both types of behaviors were sorted into program areas, and objectives and expectancies were determined. In that study the technique resulted in a *bimodal* distribution; the extreme examples were recalled, and the incidents in the "middle" were not. Therefore, it was somewhat difficult to arrive at priorities.

CI can also be used in an exploratory phase before developing a needs assessment survey in an area about which you may have too little or conflicting information. The instruments of the Bucks County model were constructed after an extensive CI study. Any district could use the same process to investigate, for example, school climate or breakdowns in communication in the system.

Implications of the incidents are not always clear. For example: A high school student is observed smoking just off campus; he puts out his cigarette before going on campus. Possible contradictory inferences are (1) *good*--he knows the rules; or (2) *bad*--the school should be teaching him not to smoke.*

DELPHI TECHNIQUE

Several needs assessment studies have employed the Delphi technique or a variation of it to achieve consensus on goals, concerns, or other items. The Delphi method was developed at the Rand Corporation to organize and share forecasts about the future by experts (Helmer 1966).

> Typically, the procedure includes a questionnaire mailed to respondents who remain anonymous to one another. Respondents first generate several rather concise statements of events, and in the second round give estimates as to the probability of each event occurring at a given date in the future. Once the respondents have given their

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*Dr. Les Schuck, director of research for Newport-Mesa Unified School District, has supplied information on practical problems of interpreting critical incidents.

> answers, the responses are collated and returned to each respondent who then is invited to revise his estimates. The third-round responses are made with the knowledge of how others felt regarding the occurrence of each event. Again, the responses are assembled and reported back to the participants. If a respondent's estimate does not fall within the interquartile range of all conjectures, he is asked to justify his position, whether or not he wishes to change his position. (Weaver 1971, 267)

Its principal features are anonymity of the respondents, iteration and controlled feedback, and statistical group responses.

Among other uses, Delphi can be modified to gather responses on criticality of goals and areas of greatest need, and to arrive at consensus on present attainment of goals. In practice, the mailed questionnaire has not been used extensively in educational applications. In some variations, groups meet face to face, but methods are employed that ensure the anonymity of individual responses. The intention is to make certain that estimates reflect rational judgment, and that individuals' perceptions will not be swayed by the influence of opinion leaders in the group.

The Delphi technique has been used to assess future needs of industrial education (Cunico 1974), and by the Institute of Government and Public Affairs at the University of California, Los Angeles, to generate perspectives on changes in American education. It was also part of a three-phase statewide study in Washington State (Rasp 1972).

A study was also done at the University of Virginia to assess scientifically the needs, desires, and opinions of the clientele. The latter involved 400 respondents, rather than the usual 50 or fewer; the respondents were not necessarily experts in the field, and the technique was used to reach agreement on what *should* happen, rather than to predict what *will* happen (Cyphert and Gant 1971).

A somewhat different application has been made by TARGET (To Assess Relevant Goals in Education Together) which combines the Delphi technique with a game procedure (see Appendix B).

The information produced by the Delphi process in TARGET results in five indices: educational goal, quality of life, perceived achievement, priority, and education trend. Statements for each index are derived from people meeting in groups, but writing their own statements anonymously. Procedures are described for sorting, categorizing, and ranking the outputs for each index.

The Delphi procedure is used in TARGET to obtain baseline data. The game aspect of TARGET is a variation of the card sort procedure. In the game phase, larger numbers of people have an active role in furnishing information pertinent to decision making about priority areas of need.

FAULT TREE ANALYSIS

Fault Tree Analysis (FTA) is a method for predicting the most probable ways by which a system might fail, in order to redesign or monitor the system to prevent the failure from occurring (Stephens 1972, Witkin and Stephens 1973). Its applications to education have been largely in analyzing the design of new programs before they are implemented, in formative evaluation of new educational programs or products, and as a part of management information systems (Witkin 1973 and 1971).

When FTA is used to derive areas of need on a logical basis, it may be used by itself or in combination with models for setting and ranking goals. It is most effective when used within the framework of a systematic approach to planning and problem solving.

FTA method. Fault Tree Analysis begins with the statement of an Undesired Event (UE) which you want to prevent from occurring in a system. (The UE can also be derived from an event that has already occurred, and that you want to prevent from recurring.) The qualitative analysis is accomplished through the development of a logic tree, consisting of a series of events formulated in a step-by-step process, and related to all other events through logic gates.

Small groups interact to generate the inputs. They can be trained in a day or two, and large trees of several hundred events can be developed in stages over one or two weeks.

Through the use of expert judgments, weightings of frequency and importance are assigned to the events, and strategic paths are derived through quantitative means. The strategic paths can be visually traced out and will show any desired number of "need" areas in the order of their probability of occurrence in the system.

Figure 10 illustrates a small branch of a tree, with two types of logic gates and four types of input events.

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Insert Figure 10

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In this illustration, Event A (Box A), is some specified Undesired Event (UE). Below it is an OR gate, meaning that *either* Event B *or* Event C could cause Event A. Below B is and AND gate, so that *both* Event D *and* Event E would have to happen to cause Event B. However, Event C could be caused *either* by Event F *or* Event G.

The different shapes of events at the bottom of this tree indicate particular characteristics of the events, and their relationship to the rest of the system. All of these relationships are taken into consideration in analyzing what chains of events are most likely to occur to bring about the UE. Thus one can trace hundreds of complex events and conditions in a system in order to analyze the "real" needs as compared with the "apparent" needs.

Applications. FTA has been used to identify high priority needs in basic skills and in occupational preparation and guidance, among others. The system that analyzes may be at the learner or the institutional level. It may be a school, a district, a state educational agency, or larger entity.

Although some phases of Fault Tree Analysis bear a resemblence to the Critical Incident technique and to concerns analysis, FTA differs from them in these ways: (1) the step-by-step logical derivation of the events on the tree, (2) the precision of inputs to the tree, (3) the capability of interrelating all events through logic gates, and (4) the graphic displays which enable the analyst or the decision maker to integrate several hundred events and to see their logical relationships.

Causal analysis. In addition to identifying high priority need areas, FTA can analyze the most probable causes underlying the discrepancies which have been established. By determining the relative criticality of the causal chains for the most important needs, it gives information for later decisions on allocating resources and specific program planning.

Sometimes the method turns up unexpected relationships. For example, the Seattle School District, after doing a FTA of its vocational education needs, allocated over $200,000 to implementing recommendations for changes in the basic mathematics program--a relationship and result that probably would not have been realized through other types of needs assessment (Stephens 1972).

It has been found that a critical educational need is more easily identified than an educational need that has not reached critical proportions (McGrath 1970). Similarly, the developers of a needs assessment questionnaire for students report that in a school with no problems, reliability of the responses is likely to be low. But in a school with severe problems, reliability is likely to be high (Taylor and others 1974, 41).

It is also easier to obtain consensus on what ought not to be than on what ought to be. FTA is one method that has been successful in identifying hidden or emerging needs before they reach high levels of criticality, and in tracing causal relationships which in turn can lead to more cost/effective program planning.

MAGNITUDE ESTIMATION SCALING

A technique which provides ratio scale expressions of the relative importance of school objectives has been developed and field tested at the Stanford Research Institute (Dell 1973, Dell and Meeland 1973, Dell 1974). The scaling technique determines values that express the perceived relative worth of objectives in ratio scales, rather than simple rankings or categorical ratings. It was field tested with patrons of school districts in the San Francisco Bay Area.

A set of 40 goals, assembled by patrons of the schools, was evaluated by fathers and mothers of students, and faculty members from the participating schools. Proportional relationships (judged evaluation by patrons) between goals were developed for the total sample and for sample subgroups. The procedure was as follows:

Each respondent received a questionnaire and a list of 40 goals, printed by computer so that each list contained the goals in a different random order. The first goal (referent) on each list was assigned a value of 50. Each respondent compared each of the remaining goals with the referent and assigned values on a comparative basis. If a respondent felt the goal was twice as important as the referent goal, the value given was 100; if it was considered half as important, the value was 25. Any positive value, including fractions, could be used by the respondents.

The geometric means of these scores multiplied by a constant resulted in objective evaluation scores; standard deviation of the logarithm of responses gave a level of agreement score. These were computed for each objective as judged by the faculty, by all parents, and by selected subgroups of parents as determined from the questionnaire data.

Respondents were also asked to consider the entire range of scores that they used in rating the objectives and needs and to indicate (1) the score above which the objectives and needs are so important that they should be given special emphasis at the school, and (2) the score below which they are of little or no value for the school. These scores then became the Upper Importance Threshold (UIT) and the Lower Importance Threshold (LIT) respectively.

The Magnitude Estimation Scale is easy to administer. Scoring and data processing are more difficult. The authors believe that the advantage of Magnitude Estimation Scaling over other methods is this:

In rating or scaling by categories (the usual method), each objective must be compared with others in the category under consideration--i.e., when rating objectives on a five-point scale or in a card sort, the only point of reference the rater has is other statements or items that are being rated.

In Magnitude Estimation Scaling, however, each objective is compared only with the reference objective. Furthermore, the results show the relative distance between objectives and not just the rank order of objectives. Figure 11 illustrates this point with the objective evaluation scores of parents and faculty for four goal areas of science.

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Insert Figure 11

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PAIRED-WEIGHTING PROCEDURE

This is a forced-choice method which can be used for setting priorities for different kinds of statements--goals, objectives, or needs.

Suppose there are 10 goals to rate for importance. Each rater is given a list of the goal statements numbered from 1 to 10, and a weighting form which compares each number with every other number. Goal 1 is compared in importance with Goal 2, and a circle is drawn around either 1 or 2 to indicate the more important. Similarly, Goal 1 is compared with Goals 3, 4, 5. . .10, and independent judgments are made for each pair.

The rater then moves to the next row and compares Goal #2 with Goals 3, 4, 5. . .10, again making judgments independently for each pair. The process is repeated until the last pair, 9-10, has been rated.

Weights are determined thus: add the number of times Goal 1 has been circled, and enter it on the line to the right of Row 1; then add up the number of times that Goal 2 has been circled, and enter it on Row 2; and so on, until all numbers have been added.

Figure 12 illustrates one rater's completed form. Weights and ranks have been added.

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Insert Figure 12

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The ratings from all who participate are added together for each row, and composite weights are established.

This forced-choice method is probably more precise than simple card sorts. The two procedures require different kinds of judgments, however.

The paired-weighting procedure, like the card sort, can be used for judging the relative importance of any set of statements. You might use lists of concerns or problems, or budget priorities, or curricular areas, or anything else pertinent at some stage of an assessment.

CHAPTER 7

REGIONAL, STATE, AND HIGHER EDUCATION APPROACHES

REGIONAL MODELS

If you were to do a needs assessment at a regional level, you would use many of the same approaches and instruments as do local school districts. Questionnaires, public opinion polls, and community meetings are all common.

Regional assessments usually employ careful sampling techniques for surveys, in order to be sure that there is an adequate representation of all segments of the public concerned, as well as students and educators. For example, the Regional Education Service Agency of Appalachian Maryland did a needs assessment and feasibility study before setting up a regional educational television network to serve three isolated rural communities (Hershkowitz 1973). A stratified sample of 1,303 families was interviewed from a total population of 199,553.

The Maryland study included not only school-age and adult students, but "disadvantaged" families, educators, health and social service groups, police and fire departments, and people from business and industry. The combined information from rankings of educational goals, educational and business documents, interviews, and analysis of the available resources, resulted in a comprehensive set of recommendations for regional ETV programming. (The criticality function designed for this study was explained in Chapter 4, and illustrated in Figure 4.)

The model and instruments used in this study are typical of multi-pronged approaches suitable for large-scale assessments. Such efforts usually require outside consultant help on design and management, for best results.

Other regional models and instruments came out of the ESEA, Title III PACE centers. From 1966 through 1970, the 21 regional centers in California did a good bit of the pioneer work in developing needs assessment methodology, including the first discrepancy instruments.

Two multi-county regional models were one from the Tri-County Supplementary Educational Service Center in Santa Barbara, California (Blood and others 1969), and the survey by the PACE-SIM Center (1970). In the former, rating scales were used in teacher-parent interviews in a situation termed "reverse-flow conferencing." (See Chapter II for a description.) The PACE-SIM model illustrated a method for probing community as well as educational issues, and analyzing the "perceptual" differences among groups in three counties.

STATE EDUCATIONAL AGENCIES

State departments of education perform needs assessments either for the purpose of making state-level decisions or to help districts with their local planning. Since 1969 when states were given the mandate under ESEA, Title III to develop needs assessment models as part of their state plans, a good deal of activity has taken place.

At present, about one-third of the states have limited their needs assessment to statewide standardized testing, usually in the basic skills and in the cognitive domain. Another one-third are at various stages in implementing goal setting and other needs assessment activities with broad-based community participation. The rest are "emerging" models. The ETS and Hershkowitz reports described in Chapter I are good sources of information.

The Bureau of Educational Research and Services at Arizona State University, Tempe, published a two-volume study containing a model for a planned Arizona statewide assessment (McGrath 1970). A 10-15 year plan was set up, but not implemented. However, it became the forerunner of the present Arizona program.

Similarly, Florida conducted a study under the combined leadership of public and private school educators, the university, and the State Department of Education (Kurth 1971). Tools were state- and district-level socioeconomic, ethnic, and educational data; a survey of educational practices and learner characteristics from a random sample of schools; and a sample of opinions of seven population groups, including employers of former students. The study concluded that "quality" system inputs have only a minimal effect on ameliorating educational needs.

In Florida, as in Arizona, there was a discontinuity between the earlier study and present efforts. Currently, the state educational agency in Florida is field testing a very detailed conceptual design for a needs assessment system (Knight 1974). The design presents a comprehensive mission, function, and task analysis of the process, defined to the level of sub-tasks and alternative methods for each. Flowcharts and narrative sections make the step-by-step procedure explicit.

The model is intended to help local districts assess their needs. Three "products" are being developed: (1) the needs assessment system, (2) a training program to prepare users of the system, and (3) a cadre of trained State Department Education personnel to provide technical assistance to districts using the system. Provisions are included for feedback and revision of the model on the basis of information from the field.

Wyoming began a long-range study in 1970 using the Worldwide model, but also incorporating the goal-setting process of the PDK model. Twenty-one districts have been engaged in one way or another in workshops, problem identification sessions, goal setting, speak-ups, surveys of community opinion, and a 40-hour training program for teachers, students, board members, and administrators in the instructional system approach to problem solving. Another eight or nine districts may be added by fall 1975.

The study, which is still in progress at this writing, was undertaken for several reasons: accountability, long-range planning, and revision of the accreditation-evaluation process for the public schools of the state.

Recent studies undertaken by the Colorado and New Jersey state educational agencies illustrate two approaches to seeking widespread community input before setting state-level priorities.

Colorado* has undertaken a statewide study of the educational and social needs of those adults (estimated at some 600,000) who are not now served by any educational agency. Large influxes of newcomers to the state and a constantly shifting population made the study advisable.

Different methods were used to reach different groups: (1) interviews of a stratified sample of 8,000 potential users of educational services, (2) mail surveys with follow-up phone calls of all businesses and industries employing five or more persons, and (3) a survey of all agencies serving adults.

The project was scheduled to operate from February 1974 to late July 1975. Some 60 field coordinators have worked on it; over $250,000 were allocated to the project. After the project data are analyzed, the instruments will be available to other states for their use.

New Jersey. The "Our Schools" project of New Jersey has had two major components to date: (1) a determination of a formalized set of goals for the state, framed and ranked in a series of statewide conferences, and (2) a public opinion survey utilizing personal interviews with a stratified sample of 1,325 residents (Opinion Research Corporation, February 1972). The data from these studies were integrated and are being used in Phase 2 to identify the current status of the high-importance goals.

The study brought together some 5,000 citizens, educators, and students in two statewide conferences, a governor's conference, and 18 regional and 15 local conferences. Citizens were also reached through the news media and local school boards. A statewide coordinating body and needs assessment advisory council managed the effort, aided by local and regional volunteers who coordinated their respective meetings. A kit of guidelines was produced for the local meetings.

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*Pre-dissemination information about the study came from Dr. John Brennan, director of adult and community education, Colorado State Department of Education.

The goal-setting effort took about two years, and resulted in two preliminary statements of goals--one of 16 outcome goals, and one of nine process goals. An analysis of participants' ratings of both sets of goals was made both before and after the discussion at the governor's conference.

The public opinion survey interviewed a probability sample of 1,000 New Jersey residents age 16 and over, a subsample of 105 Spanish-speaking residents, and a sample of 225 persons who were then in the elementary and secondary schools or who had broad exposure to them. The interviewing was done in a two-month period.

Respondents were asked to rate each of the 16 outcome goals on a four-point scale of excellence and on a three-point scale of importance. A major finding was that ratings of importance and of perceived attainment were not highly correlated (see Figure 5, referred to earlier).

The respondents then rated the nine process goals. They were also asked what changes they would like to see in the schools, which goals or procedures they would like to have implemented immediately, and many questions concerning their own knowledge, activities, and habits. The questionnaire protocols, item and content analyses, and technical information are published in the report cited above.

The Florida, Colorado, and New Jersey developments are not typical of most state-level assessments. We should make a distinction here between *state assessment*, which usually consists of standardized testing of basic skills, and *state educational needs assessment*, which relates goals to opinions and performance data about attainment of those goals.

Regarding the state testing programs, voices are being raised objecting to limiting the assessment to the cognitive domain, as is done in the majority of state-level programs. This is partly due to a lack of consensus on affective and psychomotor goals and inadequate methods for determining need indicators in these areas. Recently the Virginia State Department of Education has issued guidelines for assessing needs in the affective and psychomotor domains (Guidelines for Implementing and Relating the Virginia Needs Assessment Study to Standards of Quality and Objectives for Public Schools in Virginia 1972-74).

The ETS report on state assessments raises many thorny issues about testing and assessment, about the inadequate base for decision making which rests on standardized testing, and about the potentially undesirable impact of state educational agencies on local education.

In that report, Beers and Campbell point out that state educational agencies are taking the leadership "in helping or coercing school administrators to answer to the public's cries for better information about what children know and how well schools are doing their job."

> A major problem appears at the point where goals are translated into program objectives and into data collection procedures. As a typical example, 27 of the 50 states have stated a goal concerned with human relations. However, only three states report that they have been able to conduct an assessment of progr[illegible] toward such a goal.
>
> (Beers and Campbell 1973, 6)

HIGHER EDUCATION MODELS

Needs assessments in higher education are just beginning to emerge, and they may use any of the methods that have been discussed thus far. However, studies for community college or university needs often have a somewhat different focus and purpose from those done in elementary and secondary schools. Higher education studies are likely to look to the needs of the larger community--business, the professions, government, and new fields of research--for determining long-range goals and setting priorities, rather than to present and desired performance of students. Institutional goals may be emphasized as much as learner-oriented goals (Quinn 1974, Breuder 1973). Curriculum assessment is related to job-market opportunities and the needs of out-of-school adults.

Here are some published survey instruments, and a description of a few recent developments in community college and university needs assessment efforts.

Battelle. Battelle's Center for Improved Education has off-the-shelf surveys for community college use similar in concept and format to their instruments for local district assessment. They were developed in cooperation with the League for Innovation in the Community College, and are based on indicators classified under 12 areas of educational management: goals, communicating, participative decision making, planning, evaluating, instructing, staff development, managing personnel relations, managing resources and materials, guidance, student services, and community services.

The surveys are targeted for students, faculty, supportive staff, administrators, and board members. They were field tested in three pilot colleges. The present surveys are revisions of earlier ones, with regroupings of function areas and restatements of the goals (see Appendix A).

Institutional Goals Inventory (IGI). Educational Testing Service developed the IGI as a tool to help college and university communities delineate goals and establish priorities among them. It is a self-administered preprinted instrument consisting of statements of possible institutional goals; 20 more may be added by the college. It can be administered to students, faculty, administrators, citizens, legislators, or trustees.

Respondents rate each goal both as they exist on campus (Is) and as respondents would like them to exist (Should Be), using a five-point scale of importance. ETS will score the forms and provide profiles of ratings for the 20 goal areas.

Most of the statements are outcome goals for students in academic and intellectual development, individual personal development, humanism/altruism, cultural/aesthetic awareness, vocational preparation, traditional religiousness, advanced training, research, meeting local needs, public service, social egalitarianism, and social criticism/activism. There are also process goals relating to campus climate and the educational process, innovation, off-campus learning, and accountability (see Appendix A).

According to ETS, the IGI has been used in over 250 colleges and universities since it was introduced in 1972. The IGI is also one component of the Florida Community Colleges' Consortium model (see below).

Student Reactions to College (SRC). Educational Testing Service also publishes a 150-item questionnaire for assessing needs of students in community and junior colleges. It is intended for students who have been in college for at least one semester, and can be administered in one class period. Students rate the processes of instruction, program planning, administrative affairs and regulations, and out-of-class activities. Responses are on preprinted optical scan booklets. Scales vary with the questions: frequency of occurrence of an event, favor/oppose certain practices, and agreement/disagreement with a statement.

ETS will score the booklets and provide computer printouts showing responses for subgroups. A comprehensive user's manual explains the items, gives directions for administration and use of the data, and furnishes technical information on reliability, validity, sampling, and construction of the instrument (see Appendix B).

Central Florida Community Colleges' Consortium. (Needs Assessment Project--NAP.) A consortium of seven colleges in central Florida has developed a model for assessing community occupational needs through inter-governmental data analysis. Funding was through Title III of the Higher Education Act. Source documents include a description of the model, a user's manual, and various project reports (Tucker 1973, 1974a, 1974b, Rowell 1975).*

The primary purpose of the model was to compare community needs to the college curriculum, classify them, and set priorities so that the educational system could assign the needs to the proper administrative unit for planned change and implementation. The model outputs are:

1. Ranking of the community's educational needs in order of importance.
2. Development of alternative plans to meet those needs.
3. Guidelines for budget allocations according to need priorities.
4. Determination of economic feasibility of fulfilling the need--cost/utility analysis.
5. Development of a continuing, dynamic system to evaluate the educational system's effectiveness in meeting community needs.

The project developed several modules which can be used independently or together. The heart of the model is a computerized process for assessing occupational needs for the service areas of the community colleges, using monthly status reports of jobs requested through the Florida State Employment Service. (The same method could be used in other states.) The jobs are coded by occupations, and weightings are assigned based on net job openings for the month, average experience required, salary, and length of time the job is open. Jobs in the occupational codes are then prioritized for "need" on the composite weighting factors, and matched as nearly as possible to curriculum programs in the college.

The simulation model was field tested in the Florida Junior College system at Jacksonville. Figure 12 shows the model. Baseline data from several sources are combined with the job market information data, and an analysis is conducted over a two-year period.

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*The Center for Community Needs Assessment at the University of Florida sponsored a national conference on educational needs assessment January 22-24, 1975, at Lake Buena Vista, Florida. Materials from the conference and a list of publications relating to the model may be obtained from Dr. Katie D. Tucker, director, 1212 S.W. Fifth Street, #8, Gainesville, Florida 32601.

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Insert Figure 13

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In this model, then, the needs are not primarily learner needs, but community occupational needs which the college can relate to its curriculur planning and goals. This model can also provide for other bases of needs projections, such as population growth.

The rationale for the model is that the community college must serve the needs of the immediate community. The assessment of occupational needs was used as the prototype for developing methodology for the entire model. It is intended to provide data on present and future occupational training requirements for local communities, place the job skills needs in a priority ranking, and relate the occupational need data to the labor market and educational curriculum.

Figure 14 shows the relationships of several sources and types of data to the needs of job applicants, workers, people in training, and employers, and the relationship of the total data base to the needs assessment output.

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Insert Figure 14

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Other modules developed by colleges in the Consortium were: Institutional Goals-Setting model, Brevard Community College; Follow-Up Survey of Graduates, Lake City Community College; Summary of Student Characteristics, Central Florida Community College; Community Awareness Survey, Florida Junior College at Jacksonville; Employment Needs Survey, St. Johns River Junior College; Management Analysis, Valencia Community College; and Faculty Evaluation, Florida Keys Community College.

The survey instrument used by Brevard was the ETS Institutional Goals Inventory. Other instruments were locally developed.

Other community college studies. Another approach to assessing community college needs is through the use of telecommunications, using feedback mechanisms to get the public's response to issues presented on television. A study in which a college used its own UHF television station for this purpose is reported in Chapter 11.

The San Diego (California) Community College District has undertaken a systematic assessment of the needs of the 25,000 students in its four colleges, using the Kaufman model and the standard tools of system analysis. Foundation grants and district funding make it possible to use survey research methods with present and former students, a sample of various community subgroups, and all 1,150 full-time certificated and classified personnel of the district. The project is part of a master five-year plan which began in 1974.

An example of cooperative assessment is one at the De Anza Community College in Cupertino, California, which is assessing needs conjointly with local high schools in the region.

A university cooperative study. The University of Illinois at Urbana has begun a joint needs assessment project with four community colleges--Rock Valley, Highland, Kishwaukee, and Sauk Valley. The purpose is to determine the university's role in meeting the needs of citizens and groups in a nine-county region of northwestern Illinois. Funds have been requested under the Higher Education Cooperation Act to supplement institutional funds for the endeavor.

The assessment is the first step in planning cooperative regional delivery of nontraditional education. The impetus for the project was that various national and state reports have found large percentages of the public dissatisfied with their present level of educational attainment and potentially ready for an open-university education.

Since there is no consensus on how best to assess such needs, the university will use a number of different approaches. These include completed needs surveys previously done by consultant firms, data available from the community colleges, polling and other survey techniques, and analysis of selected professions for which the university trains its graduates.

Data from the field assessments will be used by a regional consultative council, which has representation from the participating institutions. The council will then divide responsibility for responses to the findings of the needs assessment.*

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*Information may be obtained from Dr. Robert L. Bender, program director, Office of the Associate Vice-President for Public Service, University of Illinois, Urbana, Illinois 61801.

CHAPTER 8

CONCEPTUAL AND THEORETICAL MODELS

In Chapter 3, brief reference was made to four theoretical models--EPIC, ESCO, Kaufman's, and Woodbury's. They will be described here because they illustrate concepts which may be useful should you desire to develop your own approach.

EPIC

EPIC Diversified Systems Corporation in Tucson, Arizona, has developed an approach to needs assessment within a general evaluation model. It is a synthesis of many approaches, offering a general point of view and suggesting alternatives for the different stages. It is student centered and hierarchical, proceeding from the most general objectives to be assessed at the state level, down through regional, district, school, and classroom levels.

EPIC defines a learner need as "the situation that exists when actual learner performance is below that which is determined," and a need assessment as "the process of collecting information and the determination of what educational programs are not bringing about the desired learner performances." (Needs Assessment 1972, 2). The model advocates gathering both perceptions on priorities for goals, and test data on achievement of goals.

Several booklets are available from EPIC. Booklet #8 on needs assessment and #4 on coding and selecting test items are the most relevant. The needs assessment book does not describe specific steps to be taken, nor does it provide instruments; however, it illustrates a three-dimensional approach toward developing learner goals and objectives from very general to very specific levels of concreteness, so that assessments of performance could be made at appropriate levels.

The EPIC staff works on a consulting basis with school districts and state departments of education, and also engages on extensive training, offering workshops and conferences both on-site and at the Tucson location.

ESCO

One of the earliest discrepancy models was the ESCO model, based on three assumptions:

1. That the prime focus for an assessment of needs should be the learning objectives (O) toward which students are expected to work.
2. That there are three principal reference groups--educators (E), students (S), and the consumers of the educational product (C)--and that their perceptions of any given learning objective are critical in determining the extent to which the objective is functional within a given school system.
3. When the members of these three reference groups tend to agree on the importance of a learning objective, it is functioning well within the school system.

(Sweigert 1971, Sweigert and Kase 1971)

The steps in the operation of the ESCO model are:

1. Formulate learning objectives that are currently being taught in the school system. (E)
2. Elicit perceptions of these objectives from students and provide opportunity for them to add objectives. (S)
3. Take the objectives, or stratified random samples of them, to representative members of appropriate consumer groups to determine their views of the objectives. The consumers also express perceived deficiencies in levels of student achievement and suggest additional objectives. (C)

Means and standard deviations of ratings on each skill area and objective are computed for each reference group, and the variances between and among groups are determined. These data are used for ranking the importance of objectives within skill or knowledge areas.

The model was field tested in vocational education in a four-county region north of San Francisco. In the field test, the major criterion used for evaluating each learning objective was its perceived potential usefulness in employment. The ranking of the skill areas, or the individual objectives within an area, is the core of the analysis, and is used in setting priorities for further action.

Sweigert addresses the problem of what action should be taken in respect to skill areas or objectives for which there is a high level of disagreement among the reference groups. He suggests using the data as a basis for planning, with the school-level people structuring a meeting between representatives of the different points of view. The data can be displayed in such a way as to show patterns of responses between and within various groups, and the reasons for the differences among patterns can be probed.

Sweigert emphasizes that neither the ESCO model, or any other method of assessing needs, can make decisions. A model only provides information to be used in making decisions. Ideally, it should give the decision maker an increased number of options to exercise.

KAUFMAN'S MODEL

Kaufman's approach to needs assessment is within the framework of system analysis, with education regarded as a management process (Kaufman 1968 and 1972). His theoretical and practical applications of system analysis to educational planning and administration have been widely adopted.

Kaufman gives general principles for a needs assessment, and suggests alternative procedures. But the specific instruments, data collection and analysis methods, and match/mismatch analysis are developed to fit the requirements of the educational agency. Consultant help is available for the various stages.

His model is based on a three-dimensional structure: (1) the nature of the learner, (2) the nature of the knowledge to be acquired, and (3) the nature of the implementer (teachers or parents). The interrelationships among these three groups and the reconcilation of their value systems must be taken into account in the assessment.

At this time many models use some adaptation of Kaufman's values analysis:

1. Determine the current values of each of the partners.

2. Determine the desired values of partners as they perceive them.
3. Determine the perceptions of each partner concerning the values of the other partners, both currently and in the future.
4. Determine the matches and mismatches between these differential current and future perceptions of values to form a central part of the initial discrepancy analysis.

(Kaufman 1972, 32)

Kaufman also proposes a utility model as a possible basis for needs assessment. In this model, the overall goal for education is the independent survival of the learner. The indicator of this survival is an economic one--survival is defined as "the point at which the individual's consumption equals his/her production." Figure 15 illustrates a utility continuum; the midpoint of "independent survival" is variable.

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Insert Figure 15

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In the "dependent survival" zone of the continuum, consumption is greater than production. In the "contribution zone" of the continuum, consumption is less than production. Any individual is at some point on the continuum at any time.

An educator using this model could design an educational system to achieve at least minimal outcomes for its learners by plotting where individuals currently are and where they should be. Measurable discrepancies between actual and desired results could be derived.

There are many implications of this approach. For one thing, learner "productions" would not necessarily be couched in the traditional academic curricular or educational goals and objectives terms, but would be based on real-life survival indicators. Although the model proposes that consumption and production be measured by money spent and received (an economic indicator), Kaufman points out that surviving and contributing include many humanistic requirements.

> Under this model, the greater an individual's ability to realize his own uniqueness, the greater the possibility for him to be at or beyond the 'independent survival' point. Fully functioning, self-actualizing people, will, it is suggested, contribute more, as measured by the criteria in this model. (Kaufman 1972, 37-8)

WOODBURY'S MODEL

Woodbury and others (1970) developed a research model for assessing state educational needs. The model, which drew on empirical evidence from the Virginia Needs Assessment Project, was designed to facilitate interstate comparisons and generalizations.

The strategy of the model is: (1) goals are derived from internal and external sources--policies, recommendations, and perceptions related to the learner and to supportive and facilitative domains that support learning, (2) evidences of program are obtained from courses of study and other guidelines, statistics, funding, and incidence of programmatic efforts, (3) programmatic outcomes are evidenced by scores on achievement tests and rating scales, and by various statistical indices, and (4) needs are identified as absolute and relative gaps between the goals and evidences of programmatic effort and programmatic outcomes. The model incorporates a design for periodic reassessment.

A sample model for assessing affective needs at the learner level is shown in Figure 16. Pupil and teacher ratings of affective needs are combined with personality-attitudes tests to produce two "products": (1) a set of affective needs as perceived by teachers, and (2) a set of student-perceived needs, validated through tests. Thus an "affective student population" is empirically determined.

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Insert Figure 16

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Similarly, Figure 17 illustrates the method for assessing affective needs at the facilitative-supportive level. Here the source of inputs is personnel, students, and programs; these are analyzed for gaps between students receiving or not receiving counseling, and students participating or not in the facilities and programs. The "product" is a set of needs which relate to programs and personnel but which support or facilitate work directly helping students in the affective domain.

- - - - - - - - - - - - - - - - -

Insert Figure 17

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Woodbury's model illustrates the synthesis of "hard data" (published personality test) with pupil self-perceptions and teacher ratings, to arrive at a composite assessment oriented to the learner. To assess the institutional-level needs (facilitative-supportive) he uses statistics on services and programs available, integrating these with data from learner needs to arrive at support services required.

The state of Virginia has built upon this and other studies to devise instruments for assessing pupil needs in the affective and psychomotor domains (see Chapter 6).

CHAPTER 9

CASE STUDIES OF SELECTED MODELS

To illustrate the application of various approaches to needs assessment, here are some case studies of education systems which used different models--PDK, Worldwide, Fresno, and Westinghouse. They typify current approaches, have varying degrees of prepackaged instrumentation, and have been widely implemented. The sources were selected from lists supplied by developers, and the information was gathered through interviews and written reports. A fifth, eclectic model, drawing on CSE and other sources, is also included.

CASE 1. COMMUNITY INVOLVEMENT WITH PDK

You are superintendent of a county school system serving four districts in the rural and unincorporated areas of a county bordering on the Appalachian Mountains. The county has a population of 109,000, mostly lower- and middle-income workers in factories and towns. There are about 17,500 students in the four school districts.

You would like to begin some long-range planning and provide a teacher's guide that will identify critical skills and instructional objectives. You decide to use the Phi Delta Kappa model, since it will actively involve the community, together with students and teachers, in identifying the needs.

With a federal grant of $20,000, you begin by calling in two professors from the state university who are familiar with the PDK model. Principals attend a three-day leadership workshop to learn how to develop training strategies with their staffs. Two community meetings are held--one to rate the 18 goals of the model for importance, and one to decide how well the schools are meeting the goals. Tweith grade students and teachers also rate how well the schools are doing. The top priority goal area turns out to be the language arts.

What happens after the needs assessment? For one thing, all teachers in the district are asked to submit a minimum of four performance objectives related to the most important goals. Nearly 100 teachers receive stipends to work on objectives and to prepare a final draft at the program level.

This is a long-term project. You began the assessment in May 1974; by June 1976 the teacher's guide, identifying program objectives, should be completed. The goal of the project for the second year is to develop clear statements of goals at the levels of program, critical skills, and instruction. You also plan to redo the needs assessment to see if the same discrepancies persist. For 1975-76 you will carry out a program of testing to find out "where the student is" in certain goal areas, such as reading and mathematics.

The schools in these districts are organized with cutoff points at the building levels in the 4th, 6th, 8th, and 12th grades. You are making sure that particular attention is given the pupils as they go from one school level to another.

What benefits came out of the needs assessment? For one thing, county administrators are seriously addressing themselves to curriculum planning. You think the project has been worthwhile.

Contact Person: William Phillis, Superintendent of Schools
Columbiana County, Lisbon, Ohio

CASE 2. INTENSIVE DISTRICT STUDY--WORLDWIDE APPROACH

You are coordinator of federal programs in an independent school district of 22,000 students in the Northwest. At the request of the state department of education, you undertake a district-wide study of learners' needs. Test data are available on these students but you need much more information to aid in planning future programs and to set priorities.

The model you pick is Worldwide, and with a $12,000 state grant, you retain staff of the Worldwide Education and Research Institute as consultants to the program.

You follow the model closely, appointing a 12-member quality assurance and steering committee representing the schools, the board, PTA, and parents advisory committee to the compensatory education program.

Stage 1--lots of things are happening. The committee defines areas of concern in terms of values of the district. The consultants develop a 100-item public opinion poll questionnaire. They choose a random sample to poll from adults in the community, district teachers and administrators, and students.

Stage 2--a concerns analysis is made, which results in a priority listing of learner groups whose needs are to be studied. The order turns out to be elementary, junior high, high school, preschool, and post-school.

Stage 3--results of the poll have been interpreted and a Concerns Analysis Conference is called. A committee of interested citizens is appointed for each level of learners. The 15-person committees work separately for two days to study the concerns in detail and to make recommendations.

Stage 4--you publish five well-documented books of the results of the study and the high priority needs, and present them to the district board of education. You make specific recommendations for action, including one that a follow-up study should be made. Plans are under way to budget this study for 1976.

The district finds that an important concern is the special need of adult learners. The validated need in this area, illustrating the Worldwide formula, is:

> Learner need: Adult learners need special encouragement, a variety of programs with easy access, and help in achieving a continuing process of self-development and self-realization.
>
> Target population: All adults in the city.
>
> Criterion: This need will be resolved when (1) less than 5 percent of the adult population is functionally illiterate, (2) when 80 percent of the schools are participating in the community school program, and (3) when 15 percent of the adult population participates annually in programs of adult education.
>
> Criticality: Important but not critical (#3).

Date need is to be resolved: September 1, 1975.

Did the model work? Yes, but if you were to do it again, some changes would be made. Among other things, you would involve the staff more, reduce the length of the questionnaire, and do separate concerns analyses for teachers, for principals, and for supervisory personnel. You feel that all but one of the committees functioned effectively, and the published reports show how much work and effort went into the study.

Contact Person: Dr. Geri Plum, Coordinator
Boise (Idaho) Independent School District

CASE 3. THE FRESNO COMMUNITY CONFERENCE IN ACTION

You are supervisor of curriculum in a mainly white, middle- and lower-middle-class district in Northern California, and you decide to do a needs assessment in one of the high schools and two elementary schools in the same attendance area to satisfy ESEA, Title I and early childhood education program requirements. You choose the Fresno model because you want active community involvement in voicing concerns and setting goals. (The example following is from the high school.)

You set up a task force in February 1972, but the community conferences are not held until spring 1974. In preparation, you invite a steering committee of 17 parents and staff to plan the conference. This group is later augmented to 35. Invitations go out to parents, staff, students, and the general community, and in May a one-day conference is held in the cafeteria of the high school.

At the conference, groups of five to six participants work together at tables, listing statements of what things are keeping the school from doing the job it should for students, and what the school ought to be doing for students. Ideas are written on butcher paper and passed to other tables for ratings and comments. The rating process is repeated four times. The resulting inventory of statements and ratings is transferred to cards and sorted into categories. The meeting re-results in 14 goal areas proposed for action.

You then turn over the results to a working committee of a dozen teachers, parents, and students who meet several times during the year to delineate the goals more explicitly. They also meet with subcommittees of the school's curriculum committee to translate the goals into program objectives for curriculum planning. The high school principal coordinates these efforts. Consultants from the county schools office and elsewhere give volunteer assistance in sorting out process from product goals and in facilitating group deliberations of the committee.

In-depth studies are begun in some areas of concern. One need is for better communication between parents and the school. After developing a goal statement, the committee examines the school's existing communication practices, formal and informal, probes for possible causes of the problem, and begins to identify innovative and creative ways of enhancing the communication between the school and all parents, stressing more small-group involvement and one-to-one interaction.

The total cost for the assessment is about $500 for all three schools.

Did the model work? In general, yes. The initial concerns conference took only one day, many areas were identified for study, and the community had a chance for active involvement. One year later, many of the goals derived from the need areas are being translated into action.

On the other hand, some of the faculty feel that the concerns were not the "real" needs, nor that the parents attending the conference really represented the views of the community. Since the priority lists contained mixtures of problems, solutions, and needs, the working committee found it difficult to use the concerns as a basis for program planning. However, the work is continuing, and you feel that the needs assessment was in general successful.

Contact Person: Edgardo E. Torres, Supervisor of Foreign Language,
Science, and Math
San Leandro (California) Unified School District

CASE 4. USING THE WESTINGHOUSE SURVEY

You are superintendent of a school district of 2,500 students in a rural community in the Midwest having five elementary schools, one junior high and one senior high school. Ten percent of the students are American Indian, the rest white.

You want to establish district-wide goals and set priorities. After studying several models, you choose the Westinghouse Learning Corporation off-the-shelf survey of 50 goals because it will give you input from many people in a short period of time. Yours is the first district in the state to use it. Eight administrators work with you as a team to coordinate the assessment.

You administer the survey to a random sample of 200 students, 50 each in grades 9-12; to all 160 teachers and administrators, and to 200 parents selected (by the principals) for their involvement in school activities and knowledge of the schools' programs. The mailing to the community is followed up by letters and other means to ensure full participation.

All three groups rate the goals for importance, degree of attainment, and responsibility of the schools.

The needs assessment is conducted in a 25-day period during September and October 1973. The time span includes two weeks to prepare and administer the assessment, and turn-around time for scoring and computer printouts from Westinghouse.

Immediately following this, you spend a weekend studying the results and analyzing the discrepancy scores. Then you and the administrator team take a two-day retreat to summarize and interpret the data, comparing the goal ratings with test scores and other information that you have on goal attainment.

You find a few puzzling results. For example, parents rate mathematics as the area of greatest concern, yet your standardized test scores show that pupils do better in math than in reading. You believe that parents had not understood the new math program, which was recently installed, so they rated the area as low. Therefore you adjust the goal priorities to take both opinions and test scores into account.

Your team puts together all of the information, grouping similar goals together in clusters, and arrives at a set of 14 goal statements, listed in order of priority. The first two are language arts/reading, and human awareness/self-image. All of the goal areas are continued in the curriculum, but those with lower priorities on the needs assessment are maintained rather than intensified, since apparently there is no longer as high a need as formerly.

You publish the priority list of goals, and turn them over to staff at the three division levels (elementary, junior, and senior high) to develop in more detail. For the past year, teachers have been developing behavioral objectives for each goal at the program level. At the present time, you have just put all of their objectives into a computer program that will give you printouts of behavioral objectives for each course, all related to the major goal areas.

The needs assessment cost the district approximately $650, and you are generally pleased with the results. You have two criticisms of the model: (1) the discrepancy analysis was not specific enough to discriminate some items, (Westinghouse has since corrected the program), and (2) the model does not call for group interaction. Possibly there might have been more meaning in the assessment to citizens if the district-wide Citizens Advisory Committee had been involved, for example.

However, the low cost, short time span, and ease of administration were important advantages, and you feel that you received good service and management of the assessment from Westinghouse.

Contact Person: Jerry Nichols, Superintendent
South Tama (Iowa) Community School District

CASE 5. AN ECLECTIC MODEL

You are assistant superintendent for curriculum and instruction of a suburban district in the Middle West. The area has a population of 40,000, with a school enrollment of about 12,000. You are familiar with many of the major needs assessment models, as well as the Delphi technique, and you have developed a combination model of your own.

The procedure you worked out goes like this:

1. A list of 60 potential school district objectives is developed using the Delphi technique. Students, citizens, bus drivers, custodians, cooks, teachers, administrators, and the board of education are asked to suggest things the schools "should be doing" in 23 curricular and non-curricular categories. Over 1,000 statements are received. These are reduced to 400, sorted in categories, and a subgroup of individuals selects up to two objectives for each category.

   Through a process of rating these on a five-point scale, rejecting those with low ratings, and refining the objective statements, a final list of 60 is compiled. (These objectives and other instruments are available for use elsewhere.)

2. Objectives are ranked in importance using the decision matrix from the Evaluation I Workshop developed at the UCLA Center for the Study of Evaluation.

3. Curriculum areas, K-12, are ranked by small groups at the school-site level using the PDK method, but adding the question of "Whose responsibility?" Averaging of data is used instead of a consensus.

4. Target and program objectives are developed. Data from outcome evaluation are used.

Standardized test data and historical information are used only to confirm or refute the perceptions of groups in Step 3, not to identify "what is," as in the CSE model.

You have found that this combination model gives you the information you need and you have given workshops on it in other parts of the country.

Contact Person: Dr. Fred J. Rohde, Assistant Superintendent
for Curriculum and Instruction
Independent School District #624
White Bear Lake, Minnesota

SUMMARY

It is evident that needs assessments vary considerably in time, costs, methods, and numbers of people involved.

The foregoing case studies and reports of others not included here indicate that the models that generate the most enthusiasm among participants are those that require short periods of involvement, that offer methods for lively group interaction, that have a simple system for identifying discrepancies, and that have quickly visible and easily understood outputs. If goals or objectives are to be rated, the lists should be rather short. Perceptions and subjective judgments are more likely to be used than objective data, and people appear satisfied with them.

Models that require systematic planning and implementation over several months or years appear to succeed only if the educational agency can secure highly competent project direction and management, and if those most directly involved understand at all times what is at stake and the importance of their work. Open-ended and "unstructured" models--i.e., those that do not offer prepackaged materials and surveys--are less likely to be adequately implemented than the structured types.

Models also have a better chance of successful implementation if in-service training and consultant help are available.

Sophisticated features, such as the use of differentiated school norms or complex decision rules, are often omitted, and only the simpler features used.

Models that rely mainly on perceptions of groups to arrive at discrepancies, and that use only one or two factors to identify priorities among goals, are less likely than more complex models to identify the "real" needs as distinct from the "apparent" needs. The high levels of community and staff involvement and interaction in some of these models, however, are seen by coordinators as prime benefits to the school regardless of other factors.

CHAPTER 10

PLANNING AND MANAGING THE NEEDS ASSESSMENT

You have decided to conduct a needs assessment. Where do you start? What kind of planning must be done? And how should the process be managed?

A look at the variety of methods suggested by the various models indicates that there is no one "right" way of doing it. True, there are three or four components which many writers agree should be included. These have been discussed: setting goals, finding the present status of learners on those goals, identifying and analyzing the discrepancies, and setting priorities for action.

Those might be called the "classical" steps. But the order of those steps varies among models, and some do not use a discrepancy analysis at all. And the research studies offer no empirical evidence that one way is any more valid than another.

Following a general system approach, this chapter outlines the major functions that would be applicable to any needs assessment situation, providing both structure and flexibility to meet the local case.

ORGANIZING TO GET THE JOB DONE

Someone--a manager or management team--should take responsibility for the usual management functions: planning, managing, supervising, implementing, monitoring, evaluating, and reporting. If the assessment is relatively simple, if you have prepackaged instruments, and if external consultants will process and analyze the data, only a coordinator may be needed. But for more comprehensive and longer term assessments a management team and committees are advisable. Some of the comprehensive models and kits give suggestions or guidelines for management which can be incorporated into your plan.

WHO WILL DO THE WORK?

For best results, there should be wide representation in both the planning and implementation stages of at least three groups: educators, students, and the lay public. The amounts and kinds of involvement of these groups will differ with the functions to be performed, and the stages of the needs assessment. In the planning stages, an advisory or steering committee may be needed. Task forces could assist in implementing the data collection and analysis.

Some of the groups that usually participate in the needs assessment itself are: faculty members, students, parents (randomly selected by grade level), advisory boards, boards of education, PTA boards, citizens councils, community representatives, commercial or industrial or service clubs, elected and appointed officials. Depending on the purposes of the assessment, other groups could be added, such as nonteaching staff, citizens chosen by public opinion poll methods, students who have graduated from the school system, and employers of graduates or potential employees.

SUCCESS AND FAILURE ANALYSIS

There are two major ways to approach planning and management. They are complementary to each other. One is based on analysis for success--the other is based on analysis to prevent failure.

Experience has shown that, even when plans are carefully made and carried out, a project may run into unanticipated difficulties that could have been predicted and prevented by a "failure" analysis. Furthermore, success analysis is more problematic than analysis is terms of failure--that is, the nonaccomplishment of the system's purpose (Stephens and Rogers 1975).

Therefore both approaches will be presented in this chapter: the general system approach, based on success analysis, and a system approach based on a modified Fault Tree Analysis.

PLANNING THE ASSESSMENT USING SUCCESS ANALYSIS

Regardless of the type of model to be used, these general steps could be performed for any needs assessment. The amount of effort and time spent on each will depend on how important the results are to you, and the resources that you can commit.

1. Specify the purpose of the assessment, the group(s) whose needs are to be assessed, and the people who will use the information. Secure commitment to the process and the purpose by all groups concerned.
2. Perform a function analysis of the process.
3. Determine strategies to be used.
4. Plan the management of the process, including time, tasks, and talent needed. Estimate costs, set up budget, set time lines.
5. Implement and monitor the strategies of the needs assessment plan.
6. Interpret and evaluate the information.
7. Make decisions on priorities of critical needs to be addressed for short- and/or long-range planning.
8. Evaluate the assessment. Compare the information collected and decisions made to the objectives of the effort.
9. Summarize, document, and report to decision makers. Disseminate information from the assessment to the people concerned, in a form they can use.

POINTS TO CONSIDER AT EACH STAGE

A thorough consideration of each of the foregoing steps would entail developing a new model and writing a manual for users. Since that is beyond the scope of this report, here are some salient points and questions pertinent to the nine stages.

1. Purpose and commitment

What will the information be used for? What decisions will be made on the basis of the data? By whom? What people must be satisfied, both within and outside of the system? (Groups within the system include not only staff and students, but the board of education, parents, and immediate community. Groups outside of the system might be the state department of education, a funding source, or the legislature.)

The purposes of the assessment will govern such other matters as the emphasis to be placed on generating and/or ranking goals or objectives, the kinds of data to be collected, instruments or kits to be used, and the people who will participate in the data collection.

Commitment of participants and of those who will later be asked to implement the recommendations is essential. Preliminary meetings of groups concerned or their representatives are highly desirable.

Some questions that people usually raise are: How much of my time will this take? How much of the students' time? Over how long a period? Will it really do any good? Will I get to know the results?

Even if a brief preprinted questionnaire or goal-rating instrument is to be used, with no community meetings, the participants need to know what they are committing themselves to during the assessment phase and after the needs assessment itself is over.

2. Function analysis

What major functions must be performed? Models such as the PDK, CSE, Fresno, ACNAM, and Worldwide provide outlines and descriptions of the functions. Some questions to answer are: What are the major steps to be taken? What are the antecedents and consequences of each? In the analysis you describe the information required, determine your potential sources of information, determine how to retrieve and analyze existing information, and specify the kinds of new information that must be required.

At this stage, also, the output from each phase or function should be specified. Functional flowcharts showing the flow of major activities are useful, and can be used later for checking off each function as it is completed (see Figures 7, 8, and 9 for examples).

3. Determine strategies

Will a published model or instrument be sufficient to meet the purposes of this assessment? If not, include specifications for adapting existing instruments or for designing them locally, as well as procedures for collecting and analyzing data. The PPNA package is a good source of information.

Strategies to be used will depend largely on the purposes and emphasis of the assessment and the resources available. They will also be affected by what the school system has previously done.

Has the district already set goals on which the assessment will be based? If so, strategies may center on methods for determining their importance and assessing the extent to which they are being successfully achieved. Or a non-goal-based model may be used, with the assessment focusing on perceived areas of concern (see the Fresno, PPNA, or Dallas models).

Districts not having clearly articulated or formalized sets of goals may wish to begin with the goal-setting process using Worldwide, Kaufman's, or the "Our Schools" approach of New Jersey, for example. Alternatively, one may use prepared lists of goals (PDK, CSE, Bucks County, Battelle, Westinghouse) and proceed with ratings and with gathering perceptual and performance data on them.

If a needs assessment has not previously been conducted, a comprehensive, general approach to identifying and ranking needs in all areas, both learner-centered and institutional, is probably in order. If some assessment has previously been done, however, it may be more pertinent to do an in-depth study of specific areas of need, and to identify priorities in them for program planning, in-service, or resource allocation. Such areas might be multicultural education, vocational and career education, counseling and guidance, reading, or meeting the needs of certain groups of learners, such as handicapped or non-English-speaking children.

The advantages and disadvantages of various method of goal setting and rating, community involvement, data collection, and discrepancy analysis, as well as problems of sampling and of implementation, will be considered in Chapter 12.

4. Management and resources

It may be advisable to release someone from regular duties to act as project manager for the assessment, if the district is large and if many people are to be involved. The manager is usually a director of research, director of planning, assistant superintendent for instruction, coordinator of federal projects, or a director of elementary and secondary education, at the district level. At the school site, the manager is typically the principal, although there are exceptions. At state agency levels and at universities, project managers are likely to be directors of planning or of research.

The simplest models, with off-the-shelf instruments, usually require only a coordinator or facilitator, time lines of a few days to a month or two, and a budget for materials only--usually under $500, and often less.

The comprehensive, long-range models might require a project coordinator or manager working with a management team, external consultant assistance, commitment of one to two years from start to finish, and costs running into several hundreds of thousands of dollars. Between these extremes are many alternatives--again, depending on the purpose of the assessment, sources and kinds of data to be gathered, numbers of participants, size of the target group, whether preprinted instruments are to be used, computer services needed, and the like.

Orientation sessions for those in charge are desirable. Some models have cassettes or filmstrips available (Fresno, PPNA, Worldwide), or the developers offer workshops (PDK, Worldwide, EPIC, Kaufman's).

Case studies indicate that a major management problem is setting realistic time lines and meeting target dates. Time overruns can be avoided by estimating time needed for each task, then building in additional time to take care of unavoidable delays.

5. Implement strategies

For smooth implementation, there should be workshop sessions for group leaders or members of steering committees. This is particularly true on the longer range, more complex models, and where interviews or group interaction are used. Coordinators of several case studies report that they wish they had had more time to train participants.

A common problem is that teachers may not be given enough notice before a questionnaire or test is to be administered. Or a survey may be conducted the same week that standardized tests are being given. This is a crucial area where careful replanning for success should be supplemented by analysis for potential failure.

The management system should include methods for monitoring the various stages of the assessment, and for holding specific people accountable for outputs or documents in each stage. It is also advisable to build in "backup systems" or alternative methods, especially in the long-term assessment efforts, to compensate for problems that may arise. The Fault Tree Analysis section below will discuss these points further.

6. Interpret and evaluate the information

The major concern in this phase is to have a structure within which all kinds of information collected--demographic data, test scores, people's perceptions, and other data--can be meaningfully interrelated and interpreted.

Here again the question is, what is the purpose of the assessment? What decisions can or should be made on the basis of the data?

Interpretation must be made of (1) discrepancies between desired conditions and present status, and (2) discrepant perceptions among parents, students, teachers, and other participants.

In order to interpret such discrepancies it may be necessary to probe further--to analyze causes of the discrepancies or to relate one type of discrepant information to another. Perhaps it will be necessary to conduct a second-level assessment of critical areas, or to follow up survey results with selected group interviews.

Models which offer decision rules based on several factors (e.g., CSE) provide a better basis for interpreting the data than do those based on simple differences between group scores or ranks on goals.

7. Make decicions on priorities

Once the data are interpreted, the manager or team must decide which "needs" should be chosen for action, such as curriculum planning or change. At this stage, it may be evident that the highest priority needs identified are not susceptible to solution, taking into account existing resources or other constraints. Therefore other criteria must be considered. The report of the Maryland ETV study (Hershkowitz 1973) and the guidebook to the CSE Kit discuss this matter in detail.

Another matter to consider is whether the needs assessment will give sufficient information for action. Educators who furnished information from case studies have stated that, when goals are stated too broadly, it is difficult to know what the priorities mean.

8. Evaluate the assessment

Most needs assessments studied have no built-in methods of evaluation, nor have most users conducted evaluations. Even where materials and procedures have been extensively field tested for reliability and validity, such as the CSE, PRIME, and PPNA, the implementation of the model in your system should be evaluated. Both process and product evaluation are recommended.

Process evaluation might ask for feedback from a sample of participants as to their understanding of and attitudes toward the process. It could also include an evaluation of the degree to which the original plans were adhered to, statements of what did not work, and recommendations for revised procedures or instruments when the assessment is repeated.

Product evaluation would compare the results actually achieved with the purposes and objectives of the assessment that were stated in Step 1.

9. Summarize, document, report, disseminate

Many needs assessments end in written documents which are never implemented. Documentation and dissemination have at least three major uses: to inform decision makers, to maintain a record for future action, and to give feedback to the participants.

Documents might contain summaries of the assessment, including procedures and instruments used; lists of goals and objectives generated, tables and graphs showing analyses of data, and recommendations for action.

If the needs assessment results are to be used by different groups for different purposes, separate reports could be issued and tailored to each group, with only the most relevant information included in each. Experience has shown that people who participate want to know the results of their efforts. In addition to written documents, the mass media may be used to communicate the findings. This would be particularly desirable if community support is required to initiate or sustain curricular changes or other action.

A frequently heard criticism of needs assessment is that nothing has happened as a result of previous assessments. The documentation of the assessment, if done well, will provide not only clear recommendations, but some mechanism for assuring commitment of educational and community leaders to use the results as intended.

PLANNING THE ASSESSMENT TO PREVENT FAILURE--FAULT TREE ANALYSIS

It might appear that careful planning for success will prevent failures. Research and experience have shown that this is not the case, and that "failure" is not simply the opposite of "success." The purpose in analyzing for potential modes of failure is that it alerts the administrator to areas or functions that should be carefully monitored or redesigned, and thus a more successful assessment will be possible.

Concurrently with the planning of the needs assessment, particularly Steps 1-4 above, a Fault Tree Analysis can be conducted. An abbreviated form called Fault Hazard Analysis, which does not require the actual drawing of trees or quantifying to derive strategic paths, may be used to anticipate or identify potential problems that might occur to prevent a successful needs assessment. Two kinds of failures are analyzed: failures of design and failures of implementation.

Design failures. Some questions might be: What events could cause the design to be inadequate to achieve the desired results? What failures might occur due to failures of or inadequacies in goal setting? of ranking goals? of methods used to arrive at discrepancies? What problems might arise in the nature of instruments used? in the data gathering methods? in the methods of analysis? Could any of the procedures have undesirable side effects? If a model or instrument must be adapted for local use, what distortions might result in the interpretation?

Implementation failures. What events or conditions could cause the assessment to fail to be implemented as designed? What factors internal or external to the system might prevent any activities from being accomplished? What kinds of failures might be anticipated due to involving or not involving certain groups? in sustaining their interest?

What failures might occur due to insufficient time, money, people, or other resources? to inappropriate timing? to inappropriate use of people? What would be the consequences of such failures for the total assessment? What problems might arise in collecting or processing the data? in interpreting the results? in communicating the results?

The foregoing analysis can be performed in a session of two to three hours by representatives of all groups involved in managing and implementing the assessment. Potential failure events can be arranged in a table like the following:

1	2	3	4	5
Function	Potential Failure	Possible Causes (Antecedent Events)	Possible Consequences (Effect on Other Events)	Criticality

In Column 1 are listed the major functions to be performed in the needs assessment. Failures, antecedents, and consequences for each function are listed in Columns 2-4. When all major functions have been analyzed, criticality estimates can be assigned to the failures, based on the effect these would have on the total effort. Estimates might be assigned on a three-point scale: 1 = highly critical, 2 = moderately critical, 3 = minimally critical. Major attention would be placed on the high criticality potential failures, and on the functions with the highest number of failures receiving criticality estimates of 1 or 2.

Redesigning or monitoring the assessment. Returning to the design and the methods for implementation, then, back-up and monitoring systems can be built in where necessary, resources added, or design changes made. The Fault Hazard Analysis itself may be retained for use by the project manager as a checklist and for monitoring the assessment, with copies given to those responsible for critical functions.

Fault Hazard Analysis is only one stage of the fault tree process. Where important and costly decisions are at stake as the result of the needs assessment, it is worthwhile to spend an adequate time in preplanning, using both success and failure analysis, and perhaps performing a full-scale Fault Tree Analysis.

In practice, however, it has been found that even a cursory consideration of potential hazards can illuminate unforeseen areas and increase the accuracy of the planning. Furthermore, field tests have shown that the fault tree approach has high predictive value, and that the results produce more than adequate "pay-off" for the time and effort expended (Witkin 1973).

CHAPTER 11

COMMUNICATION STRATEGIES

How much should people be involved in face-to-face interaction during the process of needs assessment?

There is no one answer to that question. It depends on your school and community situation, whether you've done a needs assessment in the past, what kinds of information you want, how much time and money you have, and the potential values in the communication process itself.

NON-INTERACTIVE STRATEGIES

Probably the simplest and quickest way to obtain a lot of information from many people is through the use of written surveys, questionnaires, or rating scales. Goals can be rated for importance and attainment, and people can express their attitudes and preferences without any group meetings at all (see the Battelle, Bucks County, Westinghouse, ACNAM, IGI, and the career and counseling surveys referred to earlier).

The Delphi technique, which uses written communication in two or three stages, may also be used to assess needs without bringing people together. Also, surveys or rating scales can be administered quickly in groups, such as school classes or meetings, without any group interaction.

Advantages of written communication are: (1) you can survey many people over a wide geographical area, (2) much data can be gathered in a relatively short time, (3) with structured instruments, there is less chance for sidetracking and irrelevant inputs, and (4) the process is relatively easy to manage.

On the other hand, you may find positive benefits in having some degree of group interaction. Not only in planning, but during the data-gathering phase, various communication settings and strategies are helpful to involve people in thinking actively and creatively about the needs of the system.

COMMUNICATION METHODS

Here are some communication strategies, mostly interactive, that have been used successfully in one or more phases of needs assessment. The numbers of people involved and the amount of interaction are somewhat independent of each other. Figure 18 summarizes both written and oral methods on two dimensions--from no group interaction to very high group interaction, and from few people involved to many people involved.

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Insert Figure 18

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Public opinion polls. Gish (1972) tested the feasibility of public opinion polling on the Gallup/Kettering model at the local district level. He designed a questionnaire and a method that could be replicated locally, at a cost of $2,000 to $10,000, if done "in house." Many regional and statewide studies have incorporated such public opinion polls in their assessments, for example in Maryland, New Jersey, and Colorado.

Speak-ups. One of the earliest large-scale community involvement assessments was done in Fresno, California, with 10,000 participants from the community (Speak-Up 1968). The speak-up was promoted through the mass media, talks to community and civic organizations, and PTA councils. The method used neighborhood "discussion parties," each with an average of six to eight people attending.

Discussion leaders were asked to "hold a small informal party. Invite a few. . .people to discuss aims and objectives for our public school system." The project provided questions to guide the discussion, and a discussion leader's and a participant's guide.

Charrette. Some communities have adapted the Charrette to needs assessment.

Charrette is a variation of a group process in which community groups design new facilities. Representatives of all parties having responsibility for or connection with the project are involved from the beginning. Procedures have been developed to arrive at all decisions openly, to communicate the reasons for accepting or rejecting a proposal, to generate as many creative solutions as possible in a short period of time, develop them, and come to some basic decision.

Groups do not vote, but the final rounds involve debating the merits of each proposal in an open meeting. Finally, the Charrette makes as many final decisions as possible through common agreement, and designs a process for resolving proposals that are deadlocked (Mylecraine n.d., 189-91).

Peccolo (1971), in a three-county study in Tennessee, evaluated the Charrette and found it effective for identifying educational needs and planning new programs.

Focus interviews. The focus interview is a group interview method, useful for gathering in-depth information on concerns and goals. Usually two interviewers are present to guide the group, but not to interfere with their discussion. They tape the proceedings and also takes notes. Immediately after the session the interviewers transcribe the tapes and analyze the contents. Ideas brought up in the interview are categorized, and the classification scheme is reviewed by both interviewers to eliminate bias.

Sessions typically include eight to twelve participants, and last about two hours. Many such sessions can be held to reach large numbers of people, and the results of the different groups are compared and synthesized.

Focus interviews were used to identify the educational needs of American Indian students in Arizona (Consulting Services Corporation 1969), and in a statewide study in Washington (Consulting Services Corporation 1970). In the latter, 34 group interviews were held to probe into needs that became evident from a statewide questionnaire.

Blackwell and Joniak (1974) conducted three research studies to refine the method. They attempted to elicit specific goals for education from parents of heterogeneous background with children of high school age. They found that the method worked, that the parents' goals for secondary education were based on the personal experiences of themselves and their children, and that the parents were not concerned for innovating educational changes.

Telecommunications. In order to reach groups not adequately served by the schools, a UHF television station owned and operated by a community college district in Southern California used videotaped panel discussions.

To determine the educational and public service needs of the area, the district held meetings of 10 discussion panels: professional and white-collar workers, Mexican-Americans, senior citizens, blue-collar workers, handicapped 5th and 6th grade children, and college-level educators. Discussions were videotaped at the KOCE-TV studios. Five groups of community lay persons (total 154) were later invited to the studios to review the tapes and to provide reactions to the opinions of the original panel participants.

The method resulted in specific lists of both needs and solutions; the conclusion was that:

> There is a need for grassroots involvement in developing educational and public service activities. Sooner or later every group with which we talked brought out the necessity for personal contact and human-to-human interface as important components of any program devised to meet the needs of Orange County.
>
> (KOCE-TV Needs Assessment Surveys 1974, 31)

They wanted close and meaningful liaison with the community, not rubber stamping of community advisory groups.

Telecommunication was an important feature of the goal-setting phase of the New Jersey State needs assessment, which used all available mass media to promote support and cooperation for the project. A special campaign was instituted, using television commercials, an eight-minute orientation film, radio spot announcements, newspaper releases, and special publications and reports, including several official communications from the Commissioner of Education to all local school districts.

The use of mass media to encourage a flow of ideas and information into the educational system is in sharp contract to past uses, which have been largely limited to disseminating information when educators solicited support for an upcoming election or bond issue.

Telephone interviews. Project E.A.S.T. (Mikol and Hafeman 1973) used telephone interviews to reach a random sample of parents and the general community. The technique allowed the staff to reach nearly everyone in the sample with less time and effort than through home visits. The parent sample was drawn from an alphabetical list of students from each school. The community sample was drawn from the city directory. Home visits were made if there was no phone.

Interviewers were paid and trained. For ranking goals on a parent questionnaire, the forms were mailed ahead of time and respondents were asked to rank them before the phone calls. There were very few refusals to answer. Interviewers received excellent answers to open-ended questions, which gave them nearly all the information needed to set priorities.

A disadvantage of the phone interview is that questions must be structured in a particular way. The project coordinator reports that if she were to do it again, she would make the following changes: (1) shorten the interviews greatly, (2) rely mainly on a few open-ended questions, (3) use as small a sample as is scientifically valid and take special care to reach each sampled household, (4) not try to sample high school graduates. Only about one-third of the one-year graduates and one-fourth of the five-year graduates returned the questionnaire.*

---

*Personal communication, Joyce Mikol, Title I coordinator, Madison (Wisconsin) Public Schools, May 1975.

Concerns conferences. The Concerns Analysis Conference of the Worldwide model is a structured group process for reviewing and integrating facts, values, and policies in order to arrive at carefully formulated objectives. The use of prepared forms, charting, and other techniques provides a combination of free interchange with logical movement of the group toward decision.

The Fresno model also identifies concerns using a structured group process, which was described earlier. The process provides opportunity for each person in the small groups to give input, yet is structured around blocks of time in which specific tasks are performed.

Reverse-flow conferencing. Traditionally, parents have interviews with teachers or counselors in order to get information on their child's progress. They expect that evaluation will be done by the school, and that they will receive suggestions for improved work or recognition of the child's achievements. The flow of information is thus primarily from the professional to the parent.

In reverse-flow conferencing, the flow of information is from the parent to the teacher/counselor. Parents give their views of their child's feelings and achievements and the teacher offers only clarifying questions or expressions of interest. Information must be withheld, as well as expressions of attitudes that would normally be expressed (Blood and others 1969).

Reverse-flow conferencing can be used in conjunction with parent ratings of student needs, either during or immediately after the conference.

COMMUNICATION CHANGES IN EDUCATIONAL SYSTEMS

Certain changes in internal and external communication patterns in public education have occurred in the past decade, partly as a result of the demand for broad-based needs assessment and accountability.

Traditionally, communication in the public schools has been top-down, inside-to-outside, and one-way. That is, communication was thought of mainly as a way of disseminating information to people who needed it--policies, curricular plans, and the like. Internally, communication tended to be from the board and administration down to teachers, thence to students. Externally, it was from the school system to the public. This is typical of "closed" systems.

Needs assessment has tended to "open up" the system. What has happened to internal communication as a result? For one thing, students and teachers have a chance to say what they think the goals of education should be and how well they are being attained. In other words, there is now upward communication in the system--from students, teachers, support staff, and others to the administration and board.

And what about external communication? Now the school is hearing from many different segments of the community, parents as well as others. And this communication is being actively sought.

Thus the patterns and flow of communication appear to be changing--slowly in many places, but quite rapidly elsewhere. Communication is seen as a way of promoting dialogue, interaction, participation, and involvement--not just "telling."

Even when the communication is one-way, as in written surveys, the schools are getting new information and involving new people.

Another way of looking at communication in the needs assessment process is to ask: What messages are sent? Who sends them? What processes are used? Who receives them? What are the "outputs" of these messages?

You might design your own communication strategies for needs assessment by selecting the most appropriate messages and sources, choosing interactive and/or non-interactive channels, and specifying the resulting messages and receivers. Figure 19 summarizes alternatives in these communication links, and relates them to the input-process-output flow of a system. Other items could be added to each of the columns.

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Insert Figure 19

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COMMUNICATION RISKS

The "new look" in communication--large-scale community participation in needs assessment--is also related to the recent trend toward "participative management" in education. But there are risks in suddenly changing the communication patterns.

If communication has previously been closed, with little or no input to top administration from teachers, students, or the community, a change may be viewed with suspicion. People want to know, what's the hidden agenda?

Too much communication is as bad as too little. People may have an "information overload." Or the needs assessment may raise some sensitive issues, and it is necessary to be sure that clear, unambiguous messages are getting out.

Attempts to involve the school and parents in assessing needs have sometimes resulted in considerable resistance and worsened communication. In a three-year study of a school district in Ohio (A Profile of Change 1973), a needs assessment performed by Battelle's Center for Improved Education at district request, and the programs to increase participation in planning which resulted from it, were strongly resisted for many reasons. In the third year, all groups but students felt the communication problems had actually become worse!

Blanchard and Hersey (1973) warn us not to implement a change or introduce participation without incorporating the appropriate communication strategy. It is also important to know what is the present communication structure. A system previously run on coercive principles will find faculty more dependent on administration leadership and less ready for an open system. Reports from case studies revealed that some parents and teachers thought the needs assessment was an attempt to impose a point of view rather than an honest request for information and opinions.

In regions with minority ethnic populations, it is particularly necessary to be sure that the communication processes used allow all to participate in the way in which they feel most comfortable. For a discussion of cross-cultural communication, see Chapter 13.

Kaplan gives an insight into an unanticipated problem in connection with participatory goal setting statewide in New Jersey:

> This decision carried with it some consequences that were not entirely unforeseen. Educational groups, including teachers, administrators, and school board members took issue with this approach (placing major emphasis on the public's input and the limitation on the educational contingent). Many regarded the project as a thinly disguised effort to diminish their influence in educational affairs. They were also suspicious over whether the Department of Education did not have an ulterior purpose and that it was perhaps concealing an already developed master plan for introduction at a later date on an unsuspecting public and a reluctant profession.
>
> (Kaplan 1972, 8)

Advantages of high involvement and interaction. In spite of potential risks, the process of interaction, in itself, may be the most important and rewarding feature of the needs assessment. Reports from implementation of the PDK, Fresno, and Worldwide models, which rely heavily on this feature, indicate that the enthusiasm and commitment of participants, both to the assessment and to later implementation of the priorities, are factors of major importance. "Regardless of the data, it was the process that mattered," report many project managers.

High involvement lets the public know that the schools care about what they think, particularly if there is some assurance that the needs assessment will result in improved instruction and/or services.

Disadvantages of high involvement. The disadvantages may lie not so much in the fact of involvement *per se*, as in the nature of the data collected. Models in which the involvement focuses on producing lists of concerns or rankings of goal statements may appear to have generated more information about real needs than is in fact the case. When the major or sole emphasis is on such involvement, it may obscure the fact that the decision makers have very little real data about discrepancies in goal attainment.

Other factors which may lessen the value of involvement are inept facilitation of groups, inadequate or nonrepresentative sampling, breakdowns in communication during high interaction sessions, imposition of the opinions of a few authority figures on the majority, and misunderstanding by the participants regarding the nature of the task at hand.

Some methods of counterbalancing such factors are careful training of facilitators or group leaders in the task and in communication and group process skills, the use of Delphi technique for achieving consensus, and orientation of participants to the nature of the needs assessment and the uses that will be made of the results.

CHAPTER 12

STRENGTHS AND LIMITATIONS OF ALTERNATIVE MODELS/APPROACHES

As far as can be determined, there have been no comparative studies of the benefits derived from various models. Furthermore, many of the studies on systematic needs assessment have taken place in the last two to three years, so that the long-term results have not been determined.

Strengths and limitations come from two sources--the model or procedure itself, and the way in which it is applied in a given case.

The points raised in this chapter came from applying the "criteria for a good model" (Chapter 3) and from interviews with people who have implemented the models referred to.

GENERAL SYSTEM MODELS

Some examples in this category are the Dallas, EPIC, Kaufman's, Educational Systems Associates, and Worldwide models.

Strengths of this approach are that needs assessment is placed specifically within the framework of systematic planning, not something added on. The assessment is organically related to all other planning and decision-making processes. It is adaptable for any size educational agency or region, and the procedures can be tailored for a given system.

Limitations are that the assessment generally requires an expert management team, considerable commitment of people's time and other resources, and a period of several months or a year to do an adequate job. People may become tired of the process. If care is not taken, the assessment itself will become more important than the decisions that are to be made as a result. For best results, consultant services may be needed. Some users have seen the process as too open-ended and unstructured.

In most of the general models, no prepackaged instruments are provided. Costs may thus be higher than for "off-the-shelf" instruments. Development of procedures locally can be both a strength and a weakness.

INDUCTIVE APPROACH

The Dallas and Fresno models and the Critical Incident technique are examples of what Kaufman labels the inductive approach. Various data and/or behaviors on "what is" are collected and analyzed before goals are developed.

Strengths of both these models are the high degree of community and school involvement and moderate costs. When the models are fully implemented, they use evaluation data from the previous year as input to present needs. The Fresno model leaves open the question of what areas or conditions are to be considered. The Dallas model, however, does have a framework for ranking priority areas, although these are not goals as such.

Limitations are that both models need competent, trained management or leadership. The Fresno model has inadequate guidelines for avoiding confusion between goals, concerns, needs, and solutions, and does not provide a discrepancy analysis. The Dallas model involves large numbers of people working for several months, and staff must be given release time for monthly meetings.

DEDUCTIVE APPROACH

In this approach, goals are selected (and usually rated for importance) before data and/or behaviors are collected. The materials may be prepackaged or developed locally.

Strengths of the deductive approach are that the goals provide a structure for looking at "what is" in the schools. If both immediate and future goals are used, the needs assessment will give fresh insight on possibilities for renewal and innovation. When goal statements are properly phrased, there is no confusion between goals and solutions.

Limitations are that goals may be too general to give an adequate structure for examining "what is." The goal structure may be too limiting or, if long lists are used, too unwieldy to base the assessment of present status.

Other strengths and limitations will be considered in the next section.

PREPACKAGED INSTRUMENTS AND KITS

These are usually deductive. Examples of prepackaged surveys are the Bucks County, Battelle, IGI, SRC, and Westinghouse. Examples of kits and packets are ACNAM, CSE, and PDK.

Strengths of these materials are that they give a firm structure and guidance to the entire effort, in most cases, although that effort may in some cases be limited to the survey procedure itself. Generally, outside consultants are not needed for management, although they may be provided (Battelle, Westinghouse, IGI). Single surveys are easy to administer and take a relatively short time. Data processing services are available for some. Costs may be less than the general system models because instruments do not have to be developed locally. Most give guidelines for sampling from the client populations. The CSE differentiated school norms and decision model are strong points.

Limitations are that the model may not fit local conditions, although most of the surveys have provision for adding goals or other questions. CSE, Bucks County, and ACNAM provide for using and integrating objective data with subjective ratings--the others do not. Battelle's surveys mix learner and institutional goal areas. The 106 goals in the CSE Kit may be overwhelming to work with, and the ACNAM surveys appear to be too long. Neither ACNAM nor Bucks County has a clear-cut method for establishing priorities among goals.

Only the PDK method uses interaction and face-to-face involvement. The others identify community concerns only through written survey or goal-ranking instruments.

PRO'S AND CON'S ON PROCEDURES

Whether you use a prepackaged set of materials or design your own, you will find that there are many ways of setting and rating goals, determining "what is" in relation to those goals, and setting priorities. Table 2 displays some of the advantages and disadvantages of alternative methods.

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Insert Table 2

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Additional points to consider, not shown in the table, are these:

Goal setting. Few groups really take a fresh approach to goal setting, except those that use futuring methods. People look at other people's lists, or derive goals from the existing curriculum. Thus there is little possibility for renewal.

On the face of it, the active involvement of many citizens in goal setting seems like a good thing to do. But sometimes there are problems.

The advisory council for the statewide needs assessment in New Jersey found:

> Goal determination is far from the matter-of-fact, simplistic activity that most observers tend to view it. Goals are frequently and quickly confused with secondary objectives, public issues, methodology, and with the amelioration of deficiencies is our society as a whole. They are closely aligned with values, philosophy and the democratic ideal, all contributing to the complexity of the task. Furthermore, discussion and decision making about goals is a much more difficult feat than is generally realized. There is a pervasive assumption that we all have common goals, that we all tend to work toward common ends, and that opening them to the light of public discussion will quickly reaffirm this. This is not so readily the case, however. For discussion entails conscientious and critical re-examination of tenets adopted long ago and usually by someone else. Serious consideration is a much more demanding, complex, and time-consuming exercise because it forces recognition of the full scope and enormity of the endeavor and the many competing forces and alternatives.
>
> (A Summary of the "Our Schools" Project 1970, 30)

Goal rating. Rating or ranking goals by specific grade levels is more productive than making global judgments about them for a school or whole system.

Differences among client groups on ratings of importance should be investigated and reconciled, not just averaged. Causes for intergroup differences should be investigated, but most models do not suggest this.

Perception ratings. Perceptions on goal attainment or present status are often highly inaccurate if used alone. Ritter (1966) did a study in which he gave parents factual statements about the school on which to base their judgments of goal attainment. Their ratings differed markedly before and after they received this information.

Test scores. Test scores may not be as valid a source of information on "what is" as is often assumed. Stake (1973) points out that school ineffectiveness may be ignored when attention is drawn to student performance, and that the irreducible errors of test scores should be recognized.

Rating quantitative and qualitative data. Although most models offer some method of quantifying the discrepancies between "what is" and "what should be," the data for "what is" are usually derived from scales of subjective judgments. The resulting figures will be no better than the nature of the questions asked, the types of scales used, and the referents available to the respondents for basing their judgments.

A technique such as Magnitude Estimation Scaling increases the precision of quantifying subjective data, as do criticality indices which functionally relate two judgments such as importance and perceived attainment. Further refinement can be obtained by relating test scores to perceived goal attainment, and by adding factors of utility and probability of change to arrive at priorities for action.

CONFUSIONS ENCOUNTERED

Examination of the written reports from many needs assessment studies, using different models, reveals that widespread confusion exists regarding what is a "need." In many instances, needs are equated with goals which rank high in importance. In others, lists of needs include statements of symptoms of a problem, vague concerns, solutions, causes, and proposals for action.

The confounding of symptoms, causes, and solutions is most likely to occur in the open-ended, non-goal-based models. The problem becomes acute when committees must grapple with such lists when translating concerns into objectives and plans for action.

Some confusion could be prevented by furnishing model users with guidelines differentiating such statements, and instructions for orienting participants. For example, there are linguistic cues, within the structure of statements, which differentiate between symptoms and solutions. Probing for reasons behind the statements, eliciting specific examples, and checking out vague generalities, will usually clarify such lists so that they can be reorganized more meaningfully.

Another type of confusion commonly found is that between learner-centered and institutional-centered needs. The "classic" models firmly state that needs assessment must focus only on learner needs. This position appears to be modified in recent developments. Nevertheless, for decision making, the two types of needs should be carefully differentiated in the data collection and analysis.

SUMMARY

There appears to be an inverse ratio between the sophistication and completeness of a model and its widespread and enthusiastic acceptance and implementation. Applying the criteria of a good model (Chapter 3) would result in high ratings for many which, in practice, are not very widely accepted or are not implemented as designed.

This chapter has set forth some broad strengths and limitations of many approaches. You as a user are in the best position to determine the feasibility and acceptability of a given model or procedure within your system.

CHAPTER 13

SOCIAL FAIRNESS AND SOCIAL BIAS

One aspect of needs assessment is conspicuous by its absence in the literature--the issue of social fairness or social bias. There is almost nothing either in the research studies or in the models or kits which takes this matter into account.

Social fairness implies these considerations:

1. Availability of foreign language translations of needs asssessment materials.
2. Use of the most appropriate methods of interaction and involvement for people of minority cultures.
3. Concern for adequate representation of all cultural and ethnic groups in the needs assessment process.
4. Appropriateness of the educational goals and the focus of the assessment to the multicultural world of the future.
5. Adequacy of existing performance tests and other measures of "what is."

There is little evidence that any given method of assessment has built-in biases against minority cultures. But the very lack of discussion of such matters in the materials on needs assessment is a cause for concern. Let us examine each of these points.

1. Translations

Few of the kits examined offer materials translated into other languages. ACNAM has a Spanish-language version of the parent survey, and Phi Delta Kappa offers lists of goals and rating sheets in English and Spanish.

This is just a beginning, however. If students and parents from non-English language backgrounds are to be adequately involved, materials should be available in the language they know best.

There are problems in getting adequate translations, of course. One is that translators differ among themselves on the correct or most adequate representation of an idea. An even more important problem is that much educational jargon does not translate easily. How do you translate "criterion-referenced tests" to Spanish? As a matter of fact, many terms common to educators make no sense to the English-speaking lay public. Trying to translate goal statements or survey instruments into another language is a healthy exercise in clarifying the English version!

2. Methods of interaction

Almost no research has been done on the best methods of involving people of different cultures in the needs assessment process. We assume that all adults should be able to answer a written survey, or participate in a community speak-up or group discussion. Not so.

An interesting study was undertaken at the Center for Northern Educational Research at the University of Alaska. The problem they were asked to solve was that most of the children attending the schools in Alaska were native Alaskans, but most of the teachers and administrators were white. Some method had to be developed to promote more open communication between the two populations.

> It was the intent of the project to establish needs assessment as the first step in breaking the pattern of inter-ethnic non-communication which was instilled in all Alaskan public educational systems. A method was developed which openly solicited contact and communication between the educational establishment, usually dominated by personnel and value orientations of the white American majority, and Native parents, whose voices are rarely heard by the institution but who are the so-called recipients of services of the total educational establishment. The project's community participation approach to needs assessment differed from the educational needs assessments previously exercised in that it attempted to build working relationships between school people and community people as needs were identified, rather than simply gathering data and turning them over to policy-makers or record keepers. (Moore and Senegut 1973, 1)

The Center set up six regional workshops, using various methods of involvement with small groups, large groups shared meals, films, and role playing. The core staff included a well-known Eskimo artist and writer, a Tlingit Indian teacher with a master's degree in school administration from the University of Alaska with Peace Corps teaching experience, and a white teacher with a master's degree in elementary teaching.

The staff considered the factors of appropriate physical surroundings in the meeting areas, how to group people, degree to which the agenda was structured, and the direction taken by speakers and consultants.

They also paid considerable attention to how groups were arranged, status factors, and nonverbal communication such as eye contact, gestures, and movement. These factors vary greatly among different cultural groups, although we tend to take for granted that "our" way is the only way.

For example, Native people, in the presence of white people, will begin by keeping quiet; white people begin by talking. Native people will speak more quietly. White people will do most of the talking, even when they are in a minority.

Many whites think the Native people are "nonverbal." The authors point out that keeping quiet in a threatening situation is a cultural response not limited to Alaskan Natives, just as talking in a threatening situation is a cultural response.

The Center staff concluded that the fostering of communication channels was "difficult, painful, arduous, and frustrating" for the staff members, consultants, and participants, but that it was necessary.

Whether the minority group is Asian-American, Native-American, Mexican-American, black, or "white ethnic," it cannot be assumed that one style of communication will be meaningful for all.

Where questions of adequate cross-cultural communication arise, a source of information would be staff at the nearest university who are engaged in cross-cultural communication research. They would be found typically in departments of speech communication, sociology, or anthropology. Representatives of the minority groups concerned should, of course, be on the needs assessment planning committee.

3. Representation

Problems arising from social bias or inadequate cross-cultural communication can often be prevented or dealt with by appropriate representation on the needs assessment steering or planning committee. Parents, students, interested citizens, and educators from minority groups can be asked to participate. They can give valuable advice not only on language and the more obvious cultural barriers, but on appropriate methods of involvement and ways to ensure active participation of all those with a stake in the educational process, throughout the needs assessment stages and later in implementing the recommendations.

Racial and cultural minorities are not the only groups inadequately represented. It has been found that social agencies (including schools) rarely listen to the poor, who are perceived as having low credibility.

When sampling is used in large-scale surveys or polls, care should be taken that the sampling technique ensures representation of all groups in the community having a stake in the needs assessment.

4. Appropriateness of goals

If you use a model which has preprinted lists of goals, they should be examined for appropriateness to all social and economic groups in the community and student body. Parents and students from all groups, including minorities, should have an opportunity to say what they really think about the goals, particularly since they may embody differing cultural values. Rating sheets alone may be inadequate for responses. They could be supplemented with interviews, small group discussions, or written comments.

5. Social bias in tests

It is well known that many achievement tests do not take important cultural and linguistic differences into account. As a result, children from minority cultures may be unfairly judged on the basis of tests which have norms based on groups quite different from theirs. The real needs of pupils may thus be obscured by the biases in the tests themselves.

Recently some instruments have been published which assess the dominant language of children, and also show their level of language development in the dominant language. But few achievement tests have forms which have been normed on other than middle-class white students. The CSE Kit gives guidelines, however, for adjusting such norms to schools with different ethnic, socioecomonic, and language backgrounds.

ASSESSING SOCIAL BIAS

The issue of social bias can itself be a subject for needs assessment. Questions concerning attitudes of students and staff toward cultural differences and toward working with people of other ethnic backgrounds, for example, could be incorporated in survyes. The multicultural education instruments described in Chapter 6 are a start in that direction. The ACNAM, also, has extensive sections on bilingual and multicultural education in its surveys.

AN AFTERWORD

Now that you have completed the needs assessment, what will you do with the results? And will they make any difference to your educational program?

Needs assessment techniques are still in the formative stages. We have very little information on the impact of assessments on education, which approaches are most useful, and how the results are being, or should be used.

Here are some assumptions that should be tested:

--That we know what the desired conditions "should be."

--That we can really find out "what is."

--That needs can be defined as simple discrepancies between "what is" and "what ought to be."

--That we know how standards should be set for the schools, and who should set them.

Kaufman makes a number of points which deserve attention in summing up major concerns of needs assessment.

1. A needs assessment is never completed. It must be a continuing affair, and changes in needs are to be expected.

2. A discrepancy analysis is the documentation of a measurable difference between current and desired (or required) states of affairs. It is not enough to guess either where we are or where we should be--"we require hard empirical data for both polar positions of a need."

3. A need is not a solution. Preconceived solutions must be left out of statements of discrepancies, or they bias the outcome and restrict the use of innovative or creative ways to solve a problem.

4. In setting priorities on need areas, they might be judged by two criteria: (a) what does it cost to meet the need, and (b) what does it cost to ignore the need?

5. Be sure all partners to the educational endeavor are involved in selection of needs and decisions about them.

6. Never select instruments that place blame on any group, or that could be used to do so.

7. Reconcile discrepancies among viewpoints of different groups.

8. Outcomes for the future as well as for the present should be included, since "we should not attempt to capture the status quo and derive an education system to maintain that status."

(Kaufman 1972, Chapter 3)

Finally, it should be recognized that needs assessment is only a beginning--the planning and implementation of solutions is yet to come. In many districts, also, the setting of goals has become an end in itself.

The word from the project managers is, don't put all your school and community energy "eggs" in the needs assessment "basket." Leave something over for turning those high priority needs into improved educational programs and services for all concerned.

TABLE 1

MATRIX OF CHARACTERISTICS OF SELECTED NEEDS ASSESSMENT MODELS

											GOAL SETTING				METHODS														
MODELS/APPROACHES	GRADE LEVEL			MATERIALS AVAILABLE							METHOD		KINDS		GOAL RANKING				DETERMINING PRESENT STATUS					IDENTIFYING DISCREPANCIES			ASSIGNING PRIORITIES TO NEEDS		
	Elementary	Secondary	College	Manual(s)	Survey(s)	Data Forms	Cards for Q-Sorts	Kit of Materials	Audiovisual Orientation	Instruction for In-Service	Provides Set of Goals	Provides Method for Generating Goals	Process/Outcome	Learner/Institution	Card Sort	Rating Scale	Statistical	Goals Not Ranked	Rating Scales	Performance Data	Demographic, Statistical	Opinion Polls, Surveys	Concerns Analysis	Narrative or Descriptive	Arithmetical Difference Score	Weighted Formulas	Take Top-Ranking Discrepancies	Weighting Procedure	Relates Needs or Discrepancies to Other Factors
ACNAM	●			●	●	●		●			●		P,O	L				●		●	●	●		●					●
Battelle		●	●	●	●						●		P	L,I		●			●						●		●		
Bucks County	●			●	●						●		O	L	●	●			●	●									
CSE	●			●	●	●	●	●			●		O	L	●	●	●			●				●		●		●	●
Dallas	●	●		●	●							●	P	I		●			●	●					●		●		●
Educ. Systems Assoc.	●	●		●	●							●	P,O	L,I		●			●	●	●	●	●	●	●		●		●
Fresno	●	●		●					●	●		●						●					●					●	
IGI			●	●	●						●		P,O	L,I		●			●										
PDK	●	●		●	●		●	●		●	●		O	L	●	●			●						●	●	●	●	
Westinghouse		●		●	●						●		O	L		●			●							●		●	
Worldwide	●	●	●	●					●	●		●	P,O	L				●	●	●	●	●	●	●	●	●		●	●

NOTE: This analysis is based on inspection of published materials and some case studies. In practice there may be variations.

TABLE 1 (Continued)

MODELS/APPROACHES	OUTPUT OF THE NEEDS ASSESSMENT					COMMUNICATION OR INTERACTION					LANGUAGE AND CULTURE		SAMPLING GUIDE-LINES	MAJOR COSTS REQUIRED							ESTIMATED TIME SPAN REQUIRED
	Ranked List of Goals	Ranked List of Concerns	Ranked List of Needs or Discrepancies	Statements of Concerns	Profile or Other	Written Survey	Polls or Interviews	Small Group Discussions	Large Conferences	Advisory Committee(s) or Task Force	Spanish Language Translation	Multicultural Content		Instruments or Materials	Development	In-Service	Data Analysis	Consulting	Management, Personnel	Contract Charge	
ACNAM					●	●					●	●	Yes	●			●				1-2 months
Battelle			●			●							Yes	●						●	± 1 month
Bucks County					●	●						●	No	●			●				not given
CSE	●		●		●	●							Yes	●			●				2-3 months
Dallas		●	●		●	●		●		●			No		●	●			●		4 months
Educ. Systems Assoc.	●	●	●		●	●	●					●	Yes		●			●	●	●	2-3 months
Fresno		●		●				●	●	●			No		●	●			●		2-4 weeks
IGI	●				●	●							No	●			●				not given
PDK	●		●					●		●	●		Yes	●					●		6-12 months
Westinghouse	●		●			●							Yes	●			●			●	± 1 month
Worldwide		●	●	●	●	●	●	●	●	●		●	Yes	●	●	●	●	●			7-8 months

TABLE 2

ADVANTAGES AND DISADVANTAGES OF ALTERNATIVE PROCEDURES USED IN NEEDS ASSESSMENT

PROCEDURE	ADVANTAGES	DISADVANTAGES
GOAL SETTING:		
Generate own goals	Encourages community involvement; partners must work out their philosophy; different groups reconcile differences on educational purposes; partners feel a commitment to the goals.	Very time-consuming; impetus for needs assessment may be dissipated; partners may think that the list of goals equals "needs"; differences among client groups must be reconciled.
Use preset list	Takes much less time; goals usually at a consistent level of generality; goals less likely to be confused with solutions or problems; usually have been set by experts, and likely to be stated more consistently; prevents "reinventing the wheel."	There may be too many or too few for local situation; goals may not apply; may be too narrow or too broad; may include only immediate goals, not future ones; often cover only the cognitive domain; some lists confuse learner and institutional goals; may limit the creative thinking of the group.
GOAL-RATING METHODS:		
Card Sorts	Easy to use individually or in small groups; most people enjoy the process; allows for interaction, if desired.	May be too mechanical; difficult to do if the number of goals is very large; must have packaged materials or make them.
Rating sheets or goal-rating questionnaires	Easy to use; easy to duplicate materials; rater can see all goals or items at once.	Respondents may fall into a pattern due to the order of the items; not as interesting as card sorts; individual judgments only.
Paired weighting procedure	More exact than simple ratings or card sorts; people enjoy it; easy to get group ratings.	Process cumbersome if more than 10 or 12 goals; forced choices sometimes difficult.
Magnitude estimation scaling	Shows relative rankings; greater specificity; gives better data for analyzing reasons for discrepancies between respondent groups; easy to administer; shows response patterns of subgroups.	Scoring and data analysis more difficult than other methods--need computer; technique not widely known; takes longer to analyze and graph data than simple "difference" techniques.

TABLE 2 (Continued)

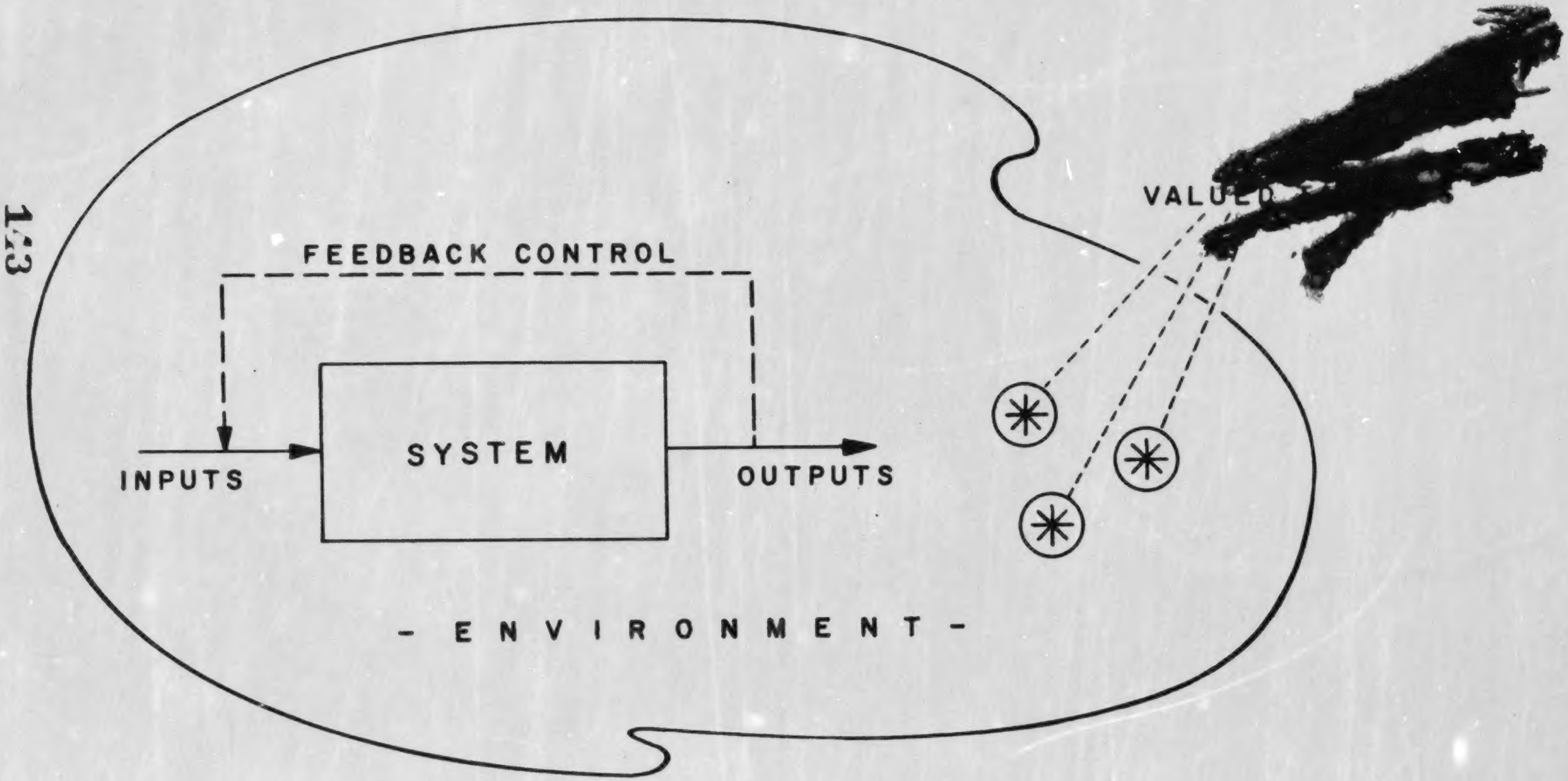
PROCEDURE	ADVANTAGES	DISADVANTAGES
DETERMINATION OF "WHAT IS"		
Perceptual judgments of parents, teachers, and students	Can compare perceptions of different groups; perceptions are valid data of a kind; easy to compare goal importance with goal attainment on similar scales; usually easy to quantify; can be related to "hard" data.	May not reflect the actual situation; if sampling is inadequate, results will be biased; ease of quantifying may obscure invalid data; tends to oversimplify the problems; based on limited knowledge.
Standardized tests (norm-referenced)	Data are quantifiable; data can be easily compared over time, for ongoing assessments; data can be related to goals or objectives; groups of students may be compared; provides baseline data on the level of need.	Test norms may not be appropriate for a given population; tests may be inappropriate for the goals used; if too much reliance on test, other data and values may be overlooked; usually reflects only cognitive achievement.
Criterion-referenced tests	Can be directly related to local goals; can help define "what should be" as competencies to be mastered.	Criterion levels may be arbitrary or invalid; may be difficult to interpret scores for degree of "need."
Student work	Gives evidence of creativity, divergent thinking not tapped by most tests; can be related directly to school goals.	Difficult to quantify data and to compare groups for extent of "need"; some goals might not have appropriate "products"; more time-consuming than examining ratings or tests.
DISCREPANCY ANALYSIS:		
Simple differences between two sets of ratings	Easy to do; does not need consultant help or computer; low cost and time.	Oversimplifies the decision making; if either set is invalid, the results will be invalid; may provide irrelevant information.
Combined analyses in qualitative statements	Takes more factors into consideration; can integrate perceptual data with test scores and input data; allows more differentiation; usually more valid than difference scores.	Harder to do; more time-consuming; most models offer no guidelines for this method; not as easy to communicate results to public.
Criticality index or function	Relates goal importance and goal attainment functionally; can differentiate more critical from less critical goal areas multidimensionally; easy to graph and communicate the results.	Apparent precision may obscure invalid data on either dimension.

TABLE 2 (Continued)

PROCEDURE	ADVANTAGES	DISADVANTAGES
SETTING PRIORITIES:		
Take goals rated highest in importance	Easy to do; shortens time for assessment, allows more time for program planning and action on goals.	Least valid method; a goal is not the same as a need.
Use highest ranked goals which also show highest discrepancies in attainment.	Fairly easy to do; takes two factors into consideration.	May oversimplify the real situation; does not take factors of feasibility or utility into account.
Decision rule (e.g., CSE)	Takes many factors into account; puts emphasis on priorities for action; results more likely to be implemented, because more specific than other methods.	Takes more time; not as easy to explain to working committees; may seem too complex; may overemphasize utility at expense of innovativeness and new directions for the school.
SPECIAL PROCEDURES:		
Critical Incident Technique	Concrete; does not start with assumptions of what "should be"; uses everyday language of participants; good at assessing system needs affecting learner attainment.	Implications of the incidents not always clear; may be difficult to categorize incidents; translating incidents into goals may confuse learner and institutional goals.
Delphi Technique	Prevents over-influence of opinion leaders on group deliberations; provides feedback and opportunity to modify opinions; demonstrated success in reaching consensus; ensures anonymity of responses.	Time-consuming; may require research assistance.
Fault Tree Analysis	Needs are derived on a logical basis; traces causes of discrepancies; interrelates hundreds of events in graphic form; has qualitative and quantitative base for assigning priorities.	Requires a trained FTA analyst to construct and quantify the tree; may be too time-consuming; does not follow classic discrepancy approach; participants must be trained to give inputs and assist in quantifying.

FIGURE 1

A MODEL OF BASIC SYSTEM-ENVIRONMENT RELATIONS

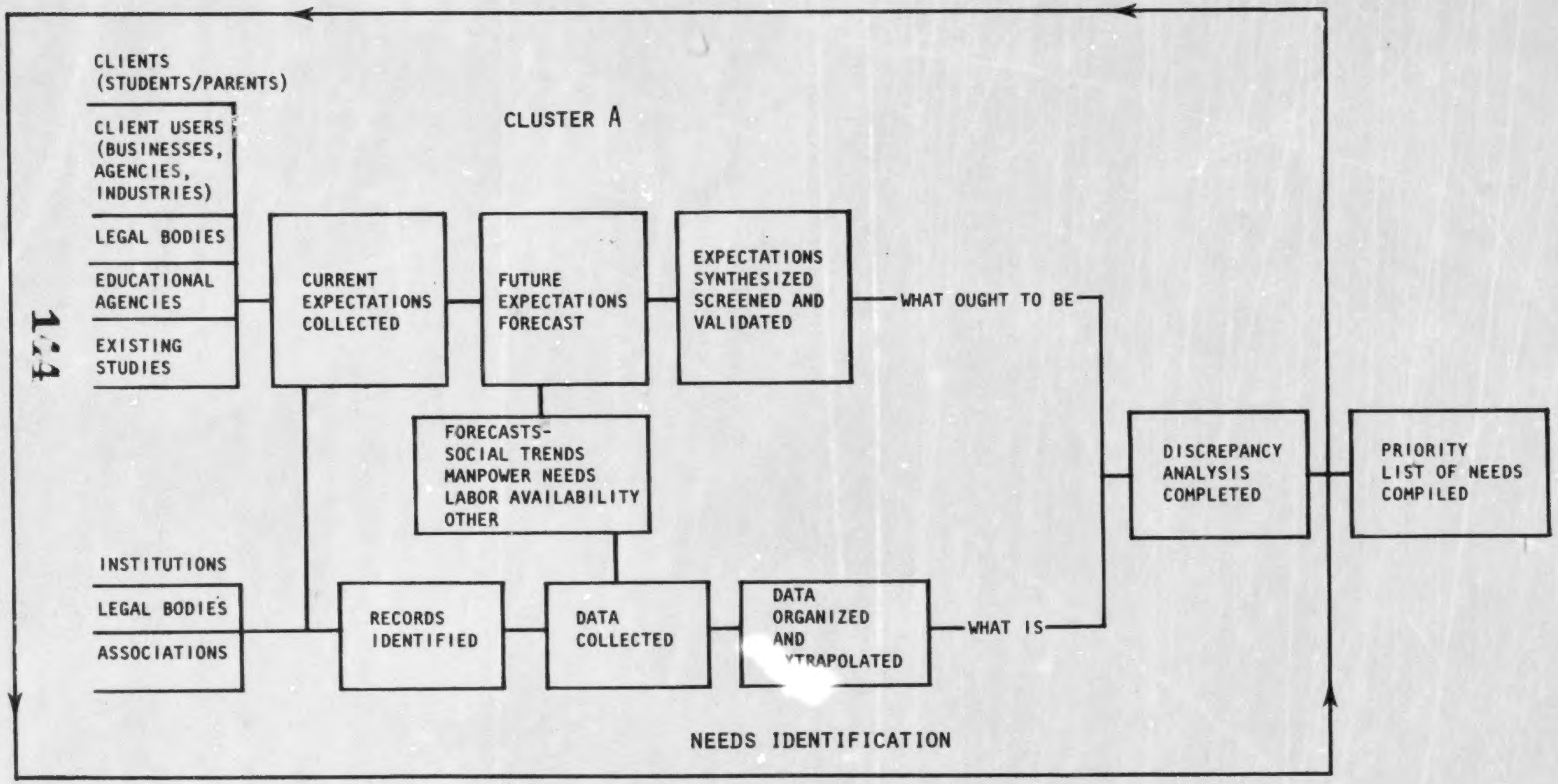

VALUED [redacted]
FEEDBACK CONTROL
INPUTS
SYSTEM
OUTPUTS
- ENVIRONMENT -

Miller 1970

FIGURE 2

MODEL OF NEEDS IDENTIFICATION

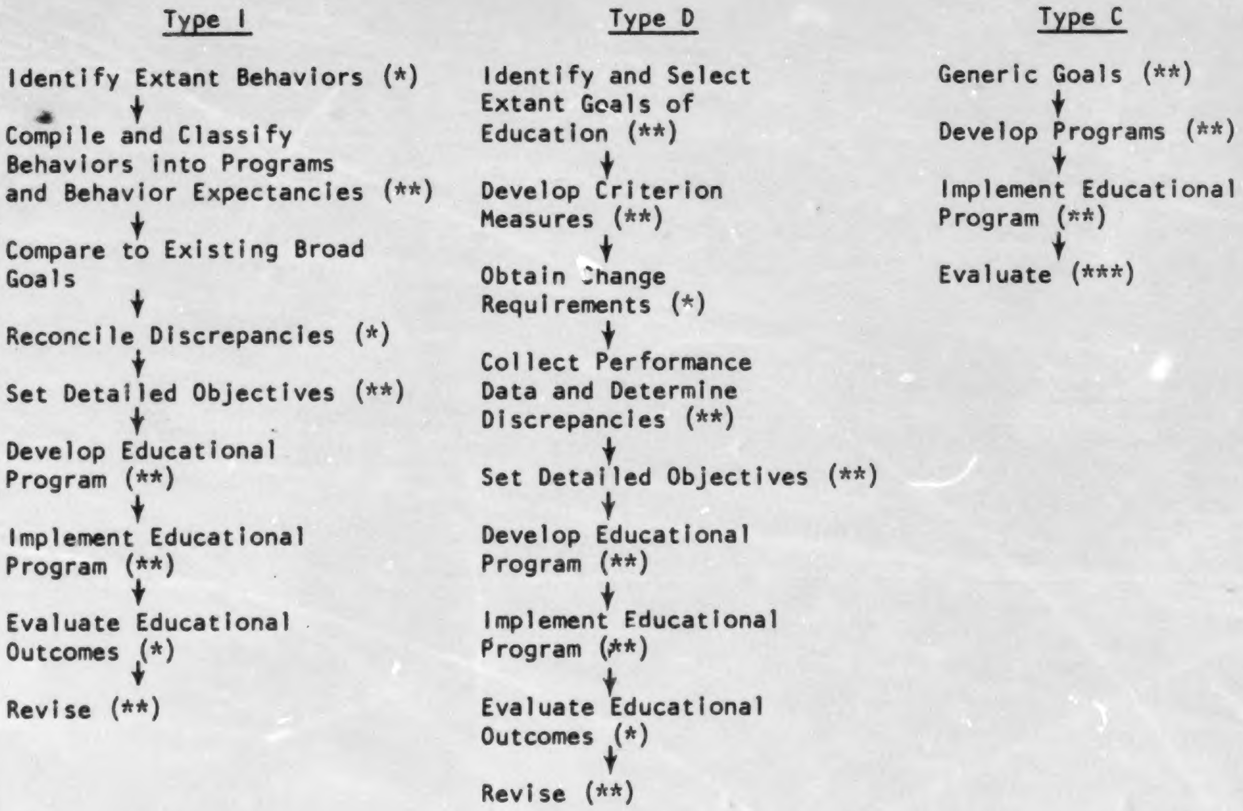
(CLUSTER A)


CLIENTS (STUDENTS/PARENTS)
CLIENT USERS (BUSINESSES, AGENCIES, INDUSTRIES)
LEGAL BODIES
EDUCATIONAL AGENCIES
EXISTING STUDIES
CLUSTER A
CURRENT EXPECTATIONS COLLECTED
FUTURE EXPECTATIONS FORECAST
EXPECTATIONS SYNTHESIZED SCREENED AND VALIDATED
WHAT OUGHT TO BE
FORECASTS- SOCIAL TRENDS MANPOWER NEEDS LABOR AVAILABILITY OTHER
INSTITUTIONS
LEGAL BODIES
ASSOCIATIONS
RECORDS IDENTIFIED
DATA COLLECTED
DATA ORGANIZED AND EXTRAPOLATED
WHAT IS
DISCREPANCY ANALYSIS COMPLETED
PRIORITY LIST OF NEEDS COMPILED
NEEDS IDENTIFICATION

Northwest Regional Educational Laboratory
Bell, Hagans, Harper, and Seger 1971

FIGURE 3

GENERIC STRATEGIES FOR ASSESSING EDUCATIONAL NEEDS AND IDENTIFYING GOALS


Type I
Identify Extant Behaviors (*)
Compile and Classify Behaviors into Programs and Behavior Expectancies (**)
Compare to Existing Broad Goals
Reconcile Discrepancies (*)
Set Detailed Objectives (**)
Develop Educational Program (**)
Implement Educational Program (**)
Evaluate Educational Outcomes (*)
Revise (**)
Type D
Identify and Select Extant Goals of Education (**)
Develop Criterion Measures (**)
Obtain Change Requirements (*)
Collect Performance Data and Determine Discrepancies (**)
Set Detailed Objectives (**)
Develop Educational Program (**)
Implement Educational Program (**)
Evaluate Educational Outcomes (*)
Revise (**)
Type C
Generic Goals (**)
Develop Programs (**)
Implement Educational Program (**)
Evaluate (***)

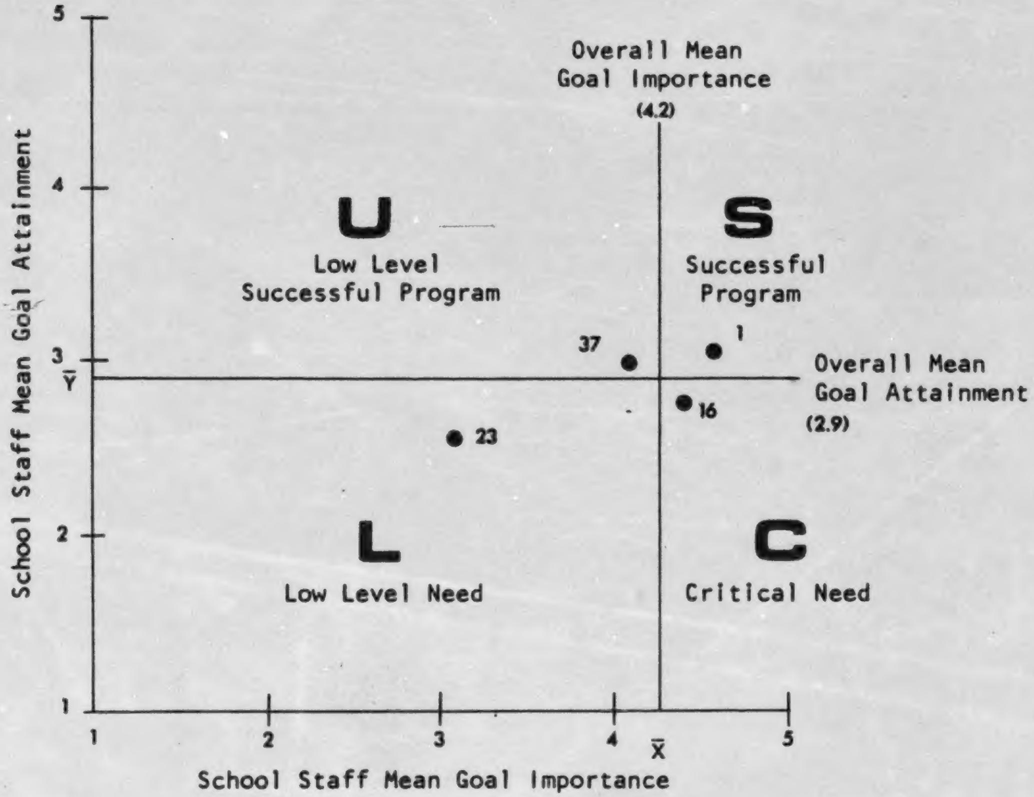
(*) Accomplished by educators and representatives of sub-community members served by the agency
(**) Accomplished primarily by educators
(***) Primarily accomplished unsystematically

Three different models for determining educational needs. Type I is basically inductive, type D is basically deductive, and type C is intended to be representative of "classical" educational procedures for identifying and defining goals and objectives. After Kaufman and Harsh (1969).

Roger A. Kaufman, Educational System Planning, © 1972. By permission of Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

FIGURE 4

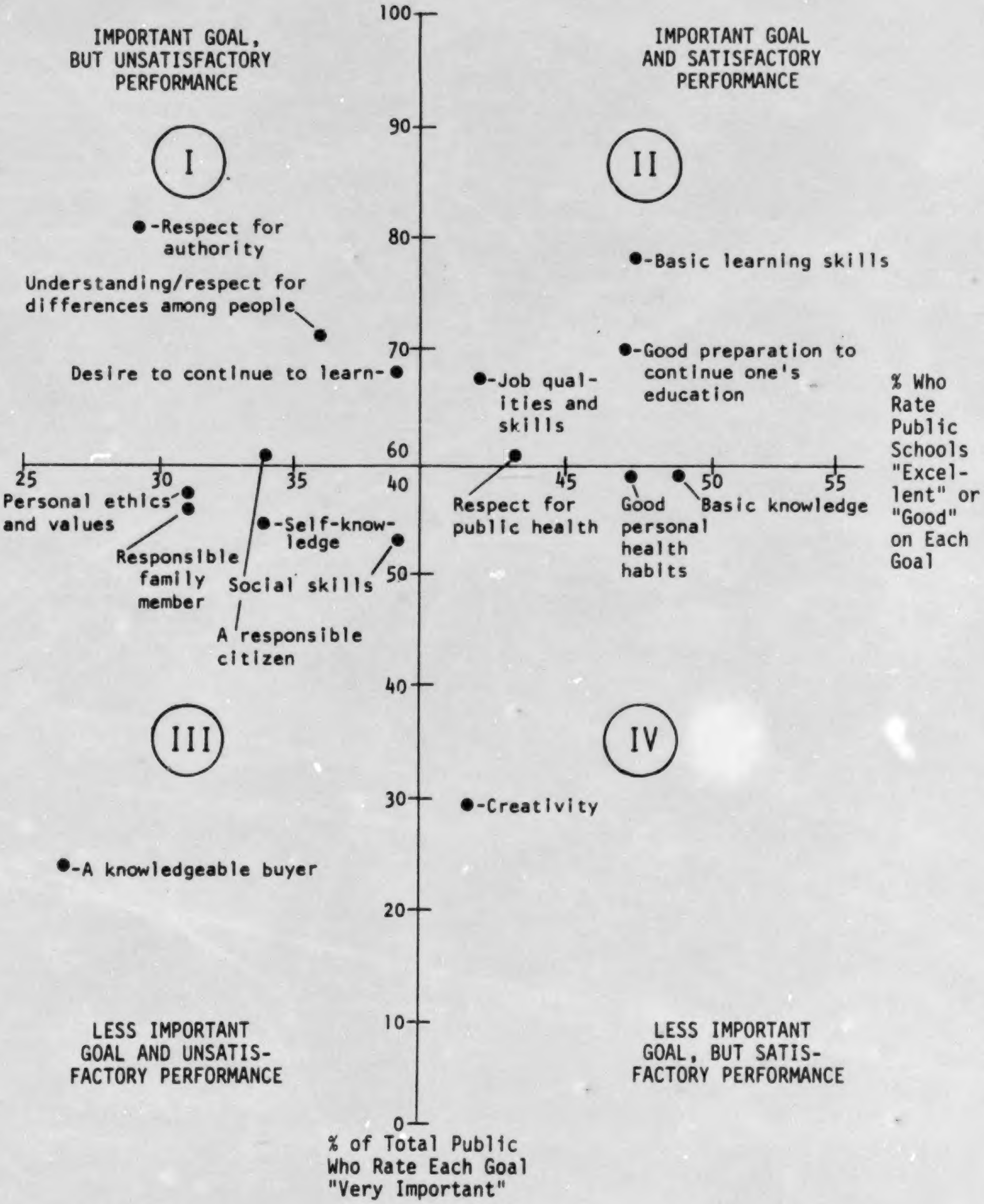
COMPLETED CRITICALITY FUNCTION DISPLAYING THE LEVEL OF PROGRAM NEED FOR THE SCHOOL STAFF RESPONDENT GROUP



Hershkowitz 1972. For each specified goal statement the mean scores for goal importance (horizontal axis) and mean scores for goal attainment (vertical axis) are plotted as a point. The numbers 1, 16, 23, and 37 refer to goal statements. The axes X̄ and Ȳ indicate "criticality axes." After plotting the goal points and deriving the axes, the quadrants are assigned a level of program need. Thus, the goal associated with goal point 16 is considered to have a "Critical Need" while the goal associated with goal point 1 is considered to be a "Successful Program." The process is repeated for each respondent group.

FIGURE 5

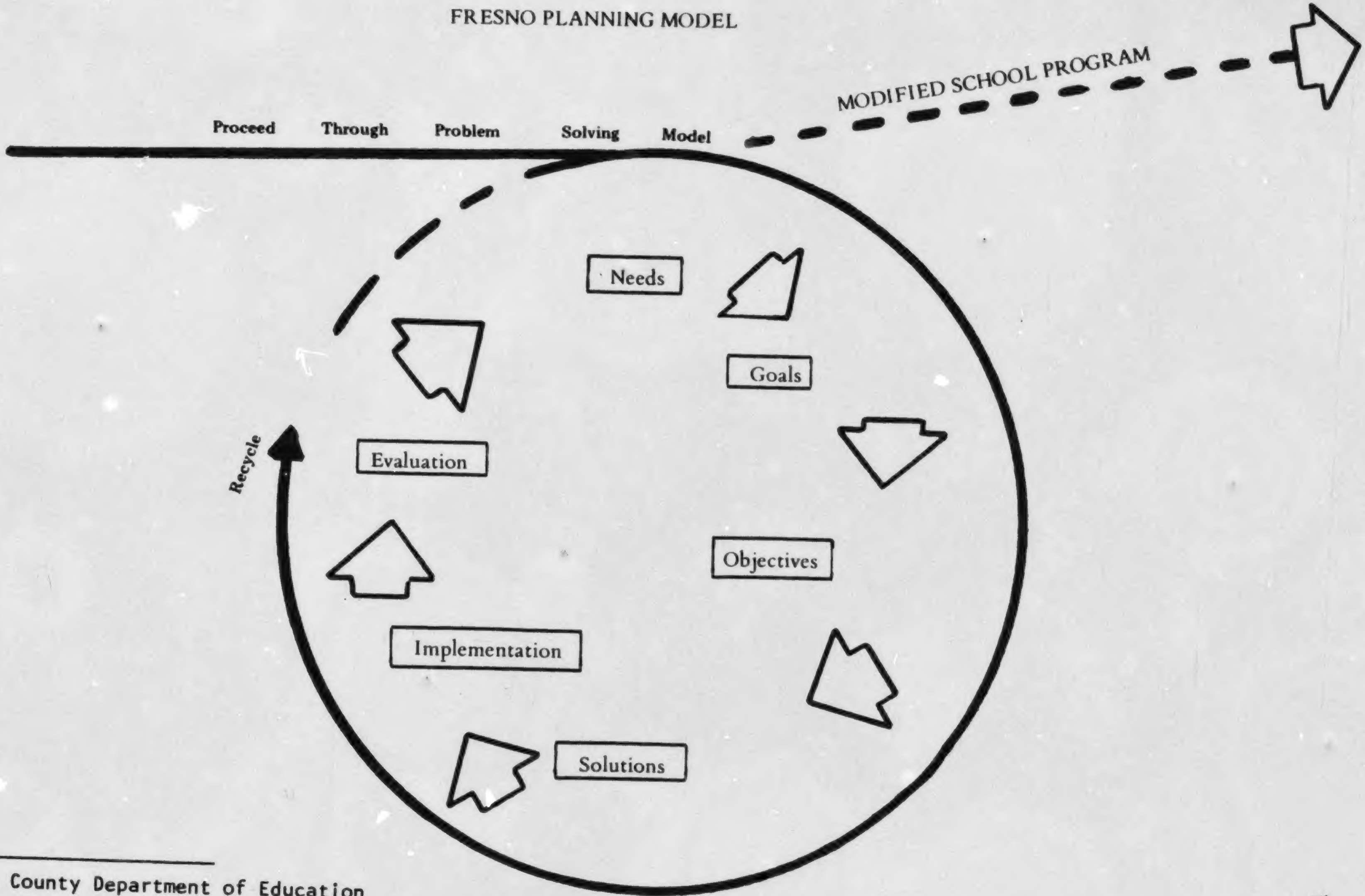
PUBLICS' RATINGS OF NEW JERSEY GOALS
ON IMPORTANCE AND ATTAINMENT



Opinion Research Corporation 1972
Reprinted by permission.

FIGURE 6

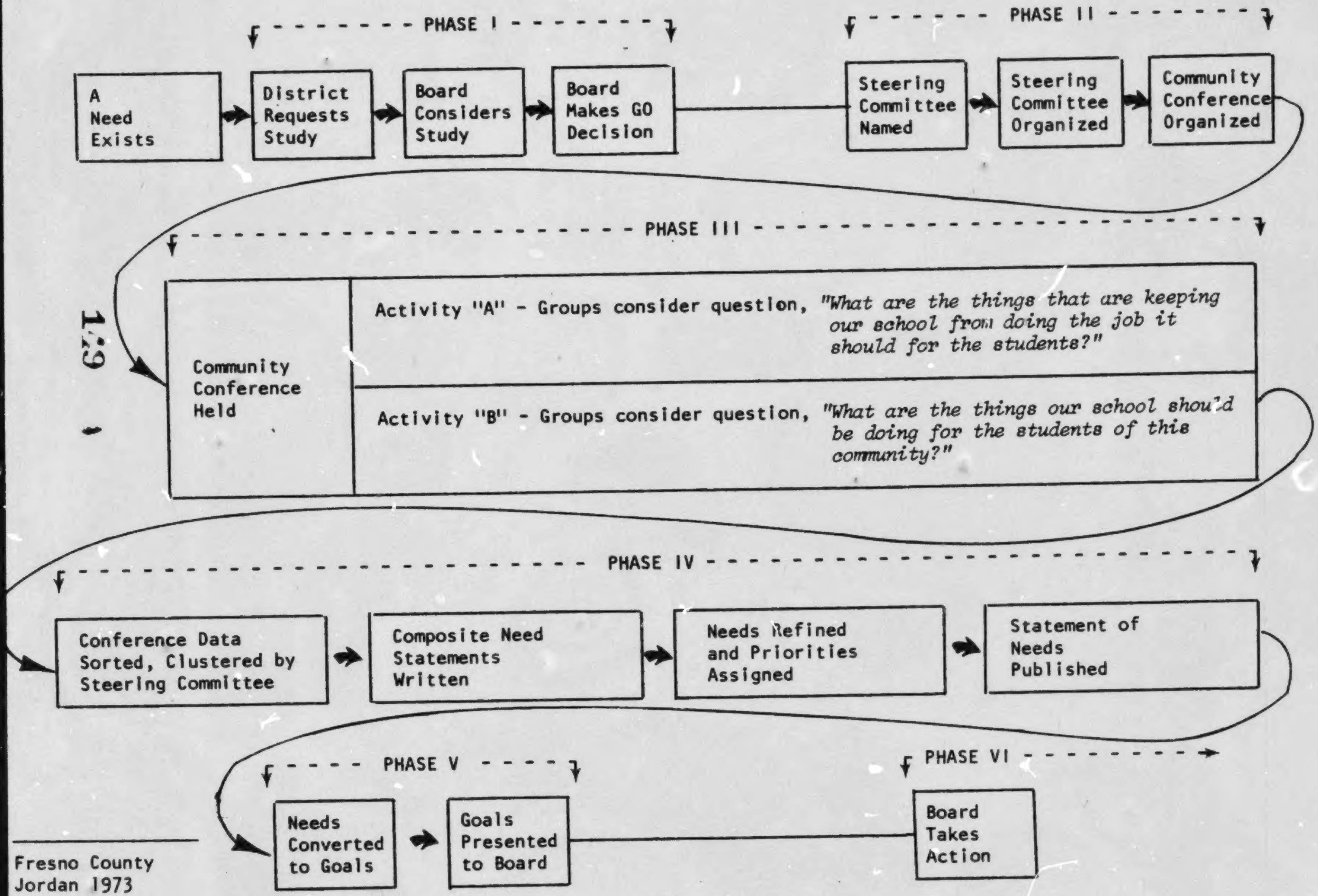
FRESNO PLANNING MODEL


MODIFIED SCHOOL PROGRAM
Proceed Through Problem Solving Model
Needs
Goals
Objectives
Solutions
Implementation
Evaluation
Recycle

Fresno County Department of Education
Jordan 1973

FIGURE 7

FLOWCHART USED IN STUDIES WITH THE COMMUNITY CONFERENCE


PHASE I
A Need Exists
District Requests Study
Board Considers Study
Board Makes GO Decision
PHASE II
Steering Committee Named
Steering Committee Organized
Community Conference Organized
PHASE III
Community Conference Held
PHASE IV
Conference Data Sorted, Clustered by Steering Committee
Composite Need Statements Written
Needs Refined and Priorities Assigned
Statement of Needs Published
PHASE V
Needs Converted to Goals
Goals Presented to Board
PHASE VI
Board Takes Action

Activity "A" - Groups consider question, *"What are the things that are keeping our school from doing the job it should for the students?"*

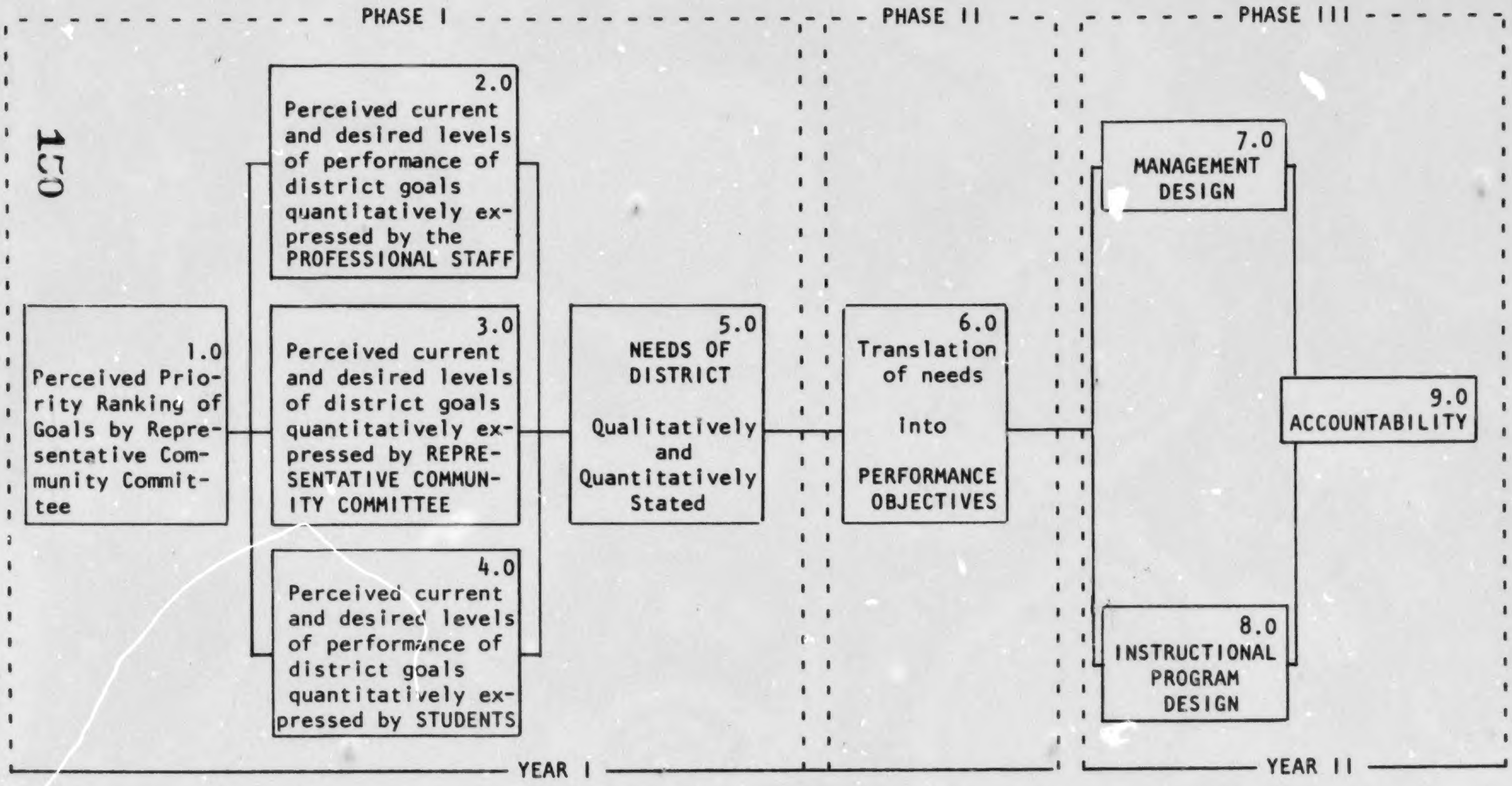
Activity "B" - Groups consider question, *"What are the things our school should be doing for the students of this community?"*

Fresno County
Jordan 1973

FIGURE 8

EDUCATIONAL GOALS AND OBJECTIVES

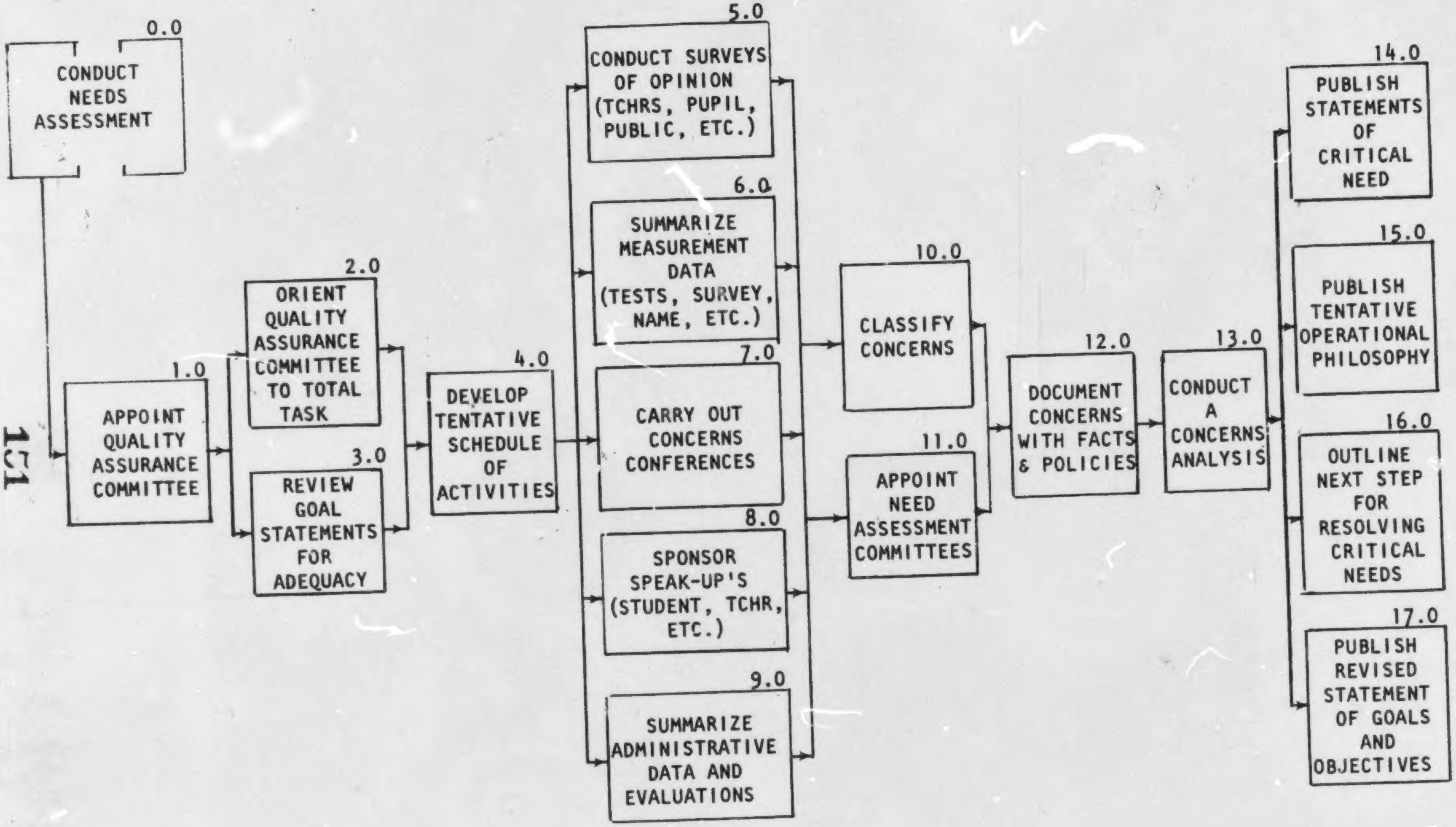
A Model Program for Community and Professional Involvement


PHASE I
PHASE II
PHASE III
1.0 Perceived Priority Ranking of Goals by Representative Community Committee
2.0 Perceived current and desired levels of performance of district goals quantitatively expressed by the PROFESSIONAL STAFF
3.0 Perceived current and desired levels of district goals quantitatively expressed by REPRESENTATIVE COMMUNITY COMMITTEE
4.0 Perceived current and desired levels of performance of district goals quantitatively expressed by STUDENTS
5.0 NEEDS OF DISTRICT Qualitatively and Quantitatively Stated
6.0 Translation of needs into PERFORMANCE OBJECTIVES
7.0 MANAGEMENT DESIGN
8.0 INSTRUCTIONAL PROGRAM DESIGN
9.0 ACCOUNTABILITY
YEAR I
YEAR II

Phi Delta Kappa Model
Administrator's Manual

FIGURE 9

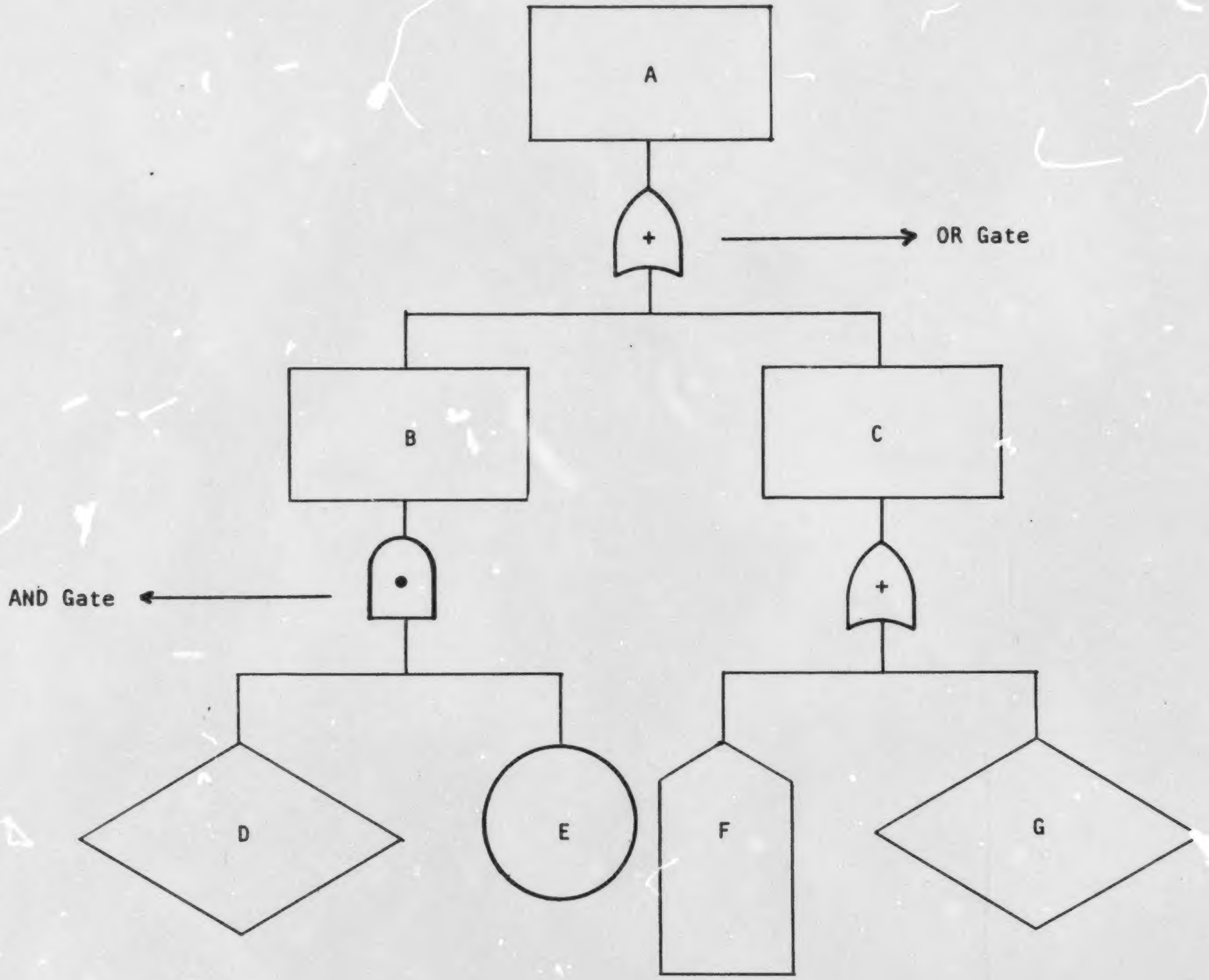
PLAN-ACTIVITY DIAGRAM FOR CONDUCTING A NEEDS ASSESSMENT


0.0
CONDUCT NEEDS ASSESSMENT
1.0
APPOINT QUALITY ASSURANCE COMMITTEE
2.0
ORIENT QUALITY ASSURANCE COMMITTEE TO TOTAL TASK
3.0
REVIEW GOAL STATEMENTS FOR ADEQUACY
4.0
DEVELOP TENTATIVE SCHEDULE OF ACTIVITIES
5.0
CONDUCT SURVEYS OF OPINION (TCHRS, PUPIL, PUBLIC, ETC.)
6.0
SUMMARIZE MEASUREMENT DATA (TESTS, SURVEY, NAME, ETC.)
7.0
CARRY OUT CONCERNS CONFERENCES
8.0
SPONSOR SPEAK-UP'S (STUDENT, TCHR, ETC.)
9.0
SUMMARIZE ADMINISTRATIVE DATA AND EVALUATIONS
10.0
CLASSIFY CONCERNS
11.0
APPOINT NEED ASSESSMENT COMMITTEES
12.0
DOCUMENT CONCERNS WITH FACTS & POLICIES
13.0
CONDUCT A CONCERNS ANALYSIS
14.0
PUBLISH STATEMENTS OF CRITICAL NEED
15.0
PUBLISH TENTATIVE OPERATIONAL PHILOSOPHY
16.0
OUTLINE NEXT STEP FOR RESOLVING CRITICAL NEEDS
17.0
PUBLISH REVISED STATEMENT OF GOALS AND OBJECTIVES

Worldwide Model
Eastmond 1972. Needs Assessment Source book

FIGURE 10

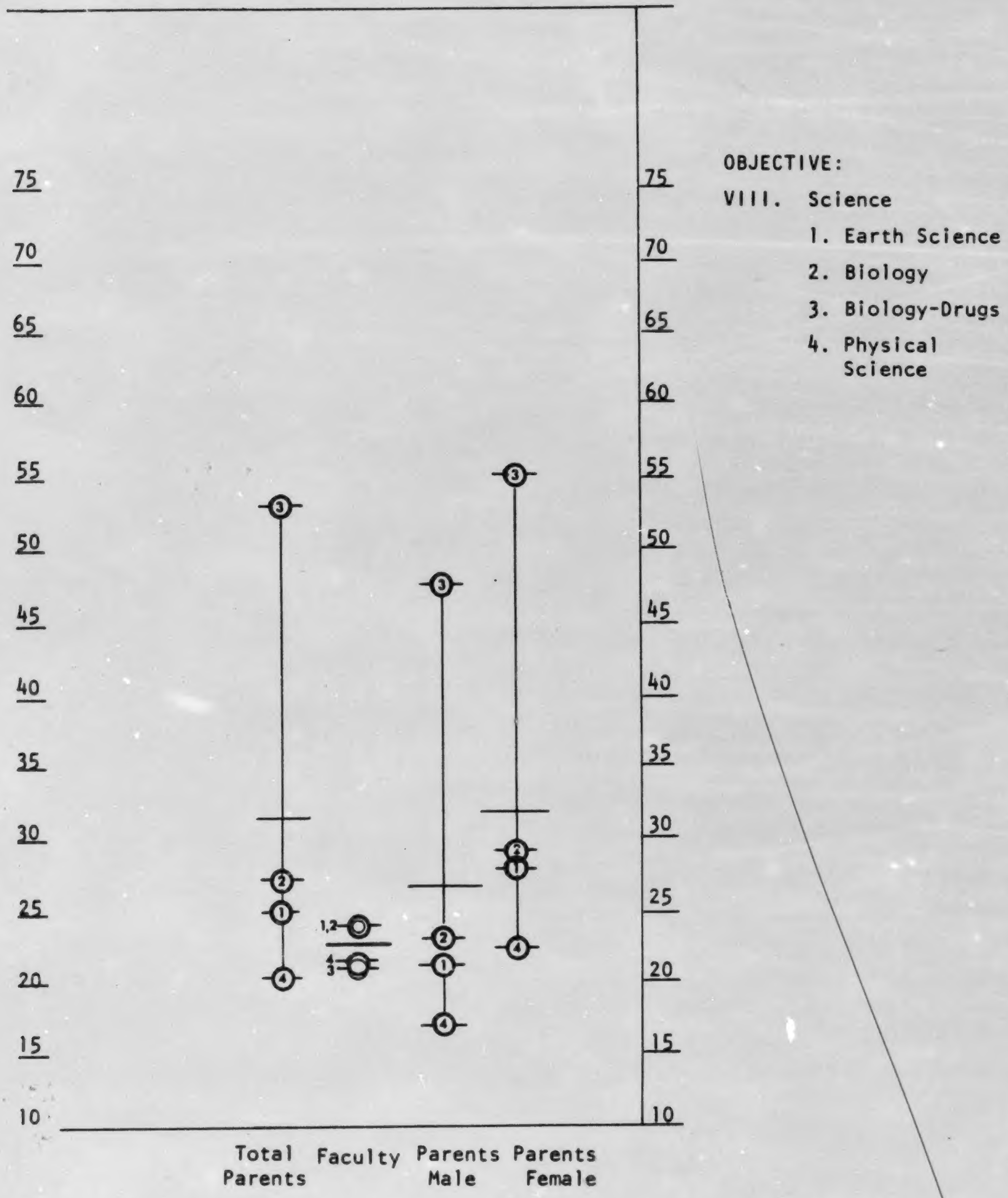
ILLUSTRATION OF A FAULT TREE BRANCH


A
+
OR Gate
B
C
AND Gate
•
+
D
E
F
G

Witkin and Stephens 1973

FIGURE 11

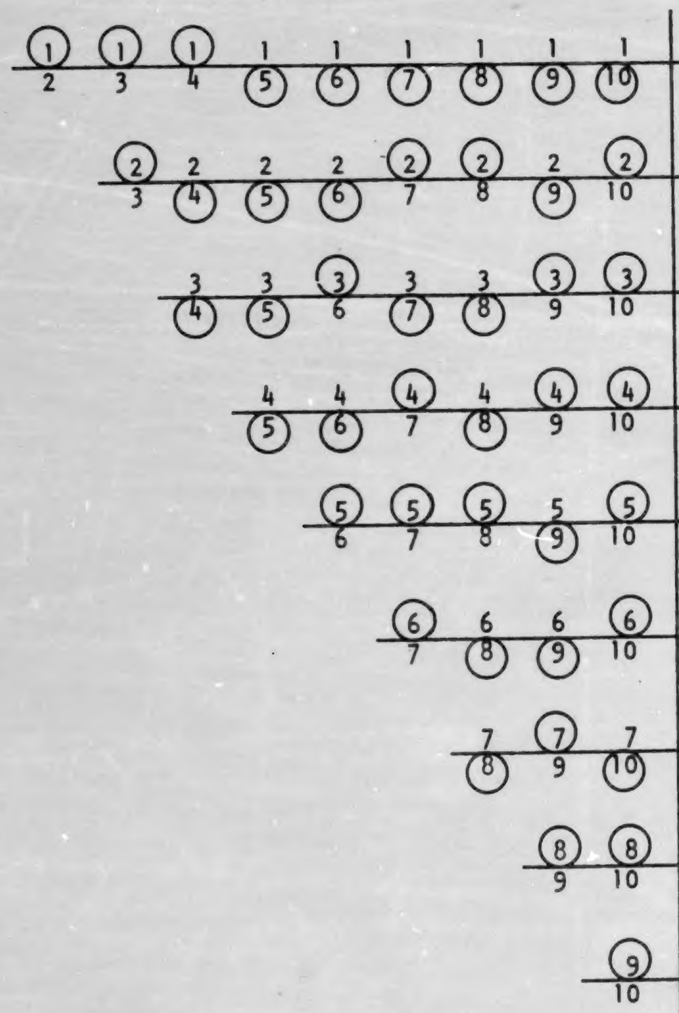
MAGNITUDE ESTIMATION SCALING: SCIENCE OBJECTIVE EVALUATION SCORES



Dell 1973

FIGURE 12

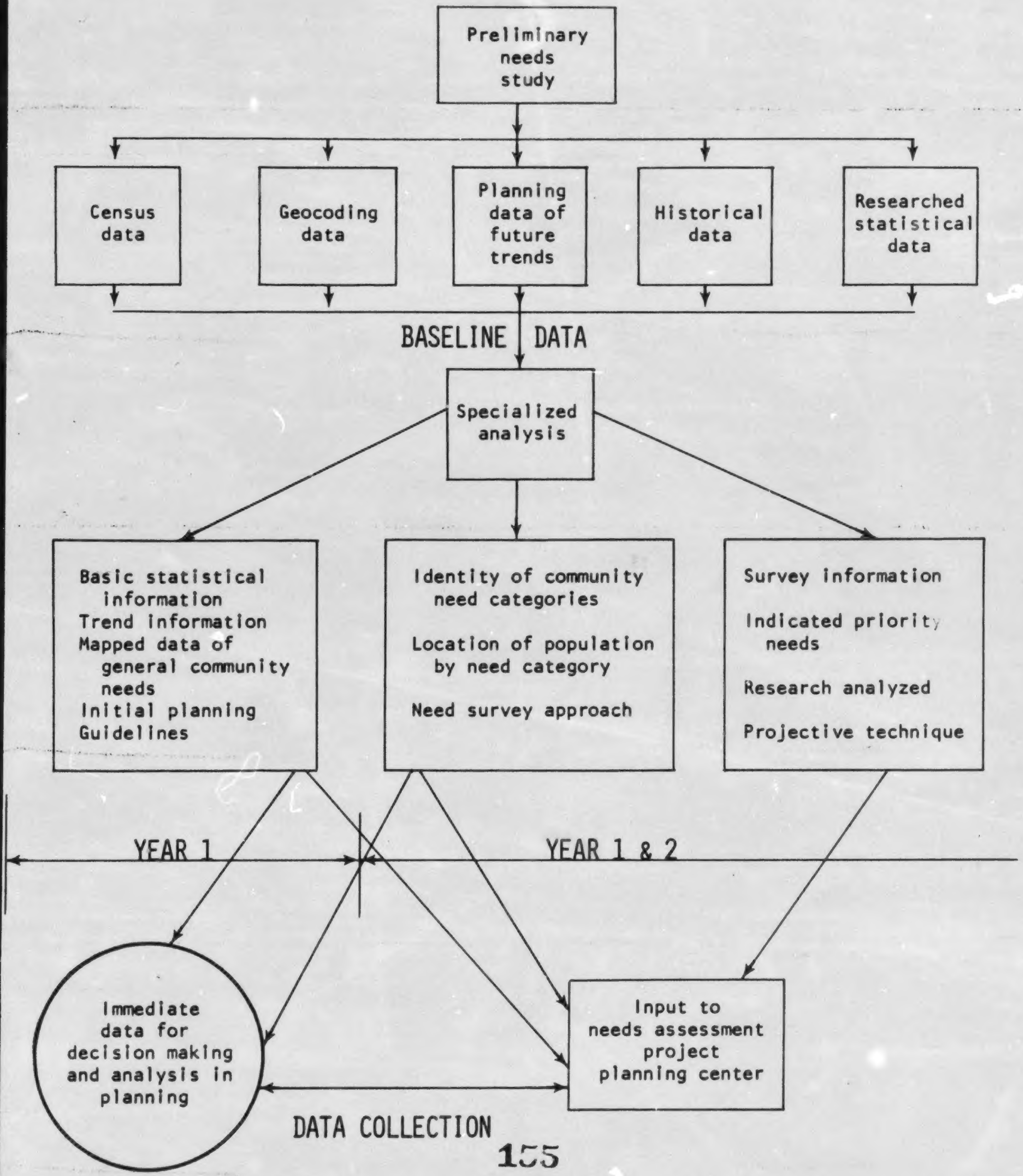
PAIRED-WEIGHTING PROCEDURE FORM


① ① ① 1 1 1 1 1 1
2 3 4 ⑤ ⑥ ⑦ ⑧ ⑨ ⑩
② 2 2 2 ② ② 2 ②
3 ④ ⑤ ⑥ 7 8 ⑨ 10
3 3 ③ 3 3 ③ ③
④ ⑤ 6 ⑦ ⑧ 9 10
4 4 ④ 4 ④ ④
⑤ ⑥ 7 ⑧ 9 10
⑤ ⑤ ⑤ 5 ⑤
6 7 8 ⑨ 10
⑥ 6 6 ⑥
7 ⑧ ⑨ 10
7 ⑦ 7
⑧ 9 ⑩
⑧ ⑧
9 10
⑨
10

Goal		Weight	Rank
1	=	3	7.3
2	=	4	6
3	=	3	7.3
4	=	5	3.3
5	=	8	1
6	=	5	3.3
7	=	3	7.3
8	=	7	2
9	=	5	3.3
10	=	2	10

FIGURE 13

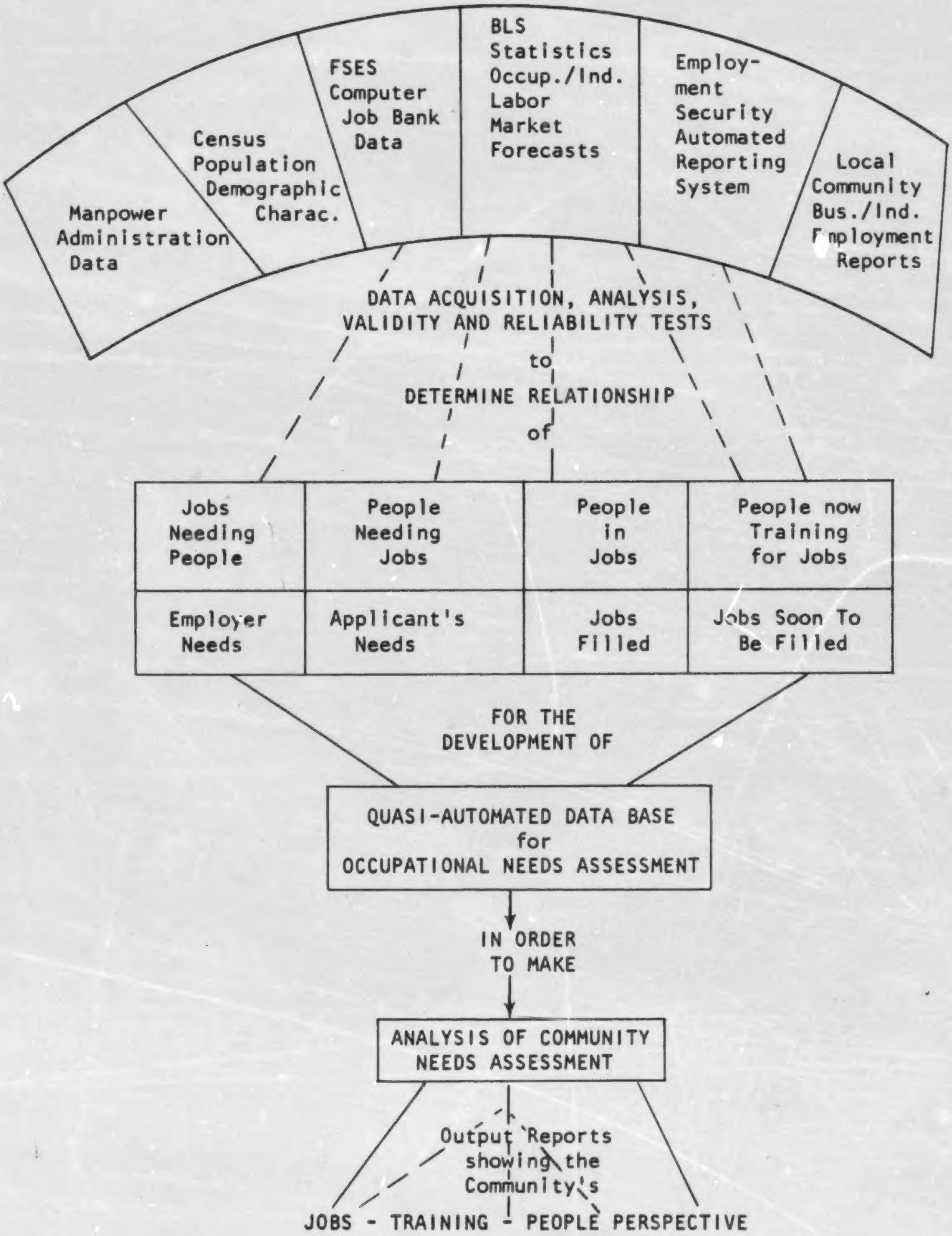
FLORIDA COMMUNITY COLLEGE MODEL


Preliminary needs study
Census data
Geocoding data
Planning data of future trends
Historical data
Researched statistical data
BASELINE DATA
Specialized analysis
Basic statistical information
Trend information
Mapped data of general community needs
Initial planning
Guidelines
Identity of community need categories
Location of population by need category
Need survey approach
Survey information
Indicated priority needs
Research analyzed
Projective technique
YEAR 1
YEAR 1 & 2
Immediate data for decision making and analysis in planning
Input to needs assessment project planning center
DATA COLLECTION

Tucker 1973

FIGURE 14

DATA BASE FOR COMMUNITY COLLEGE MODEL

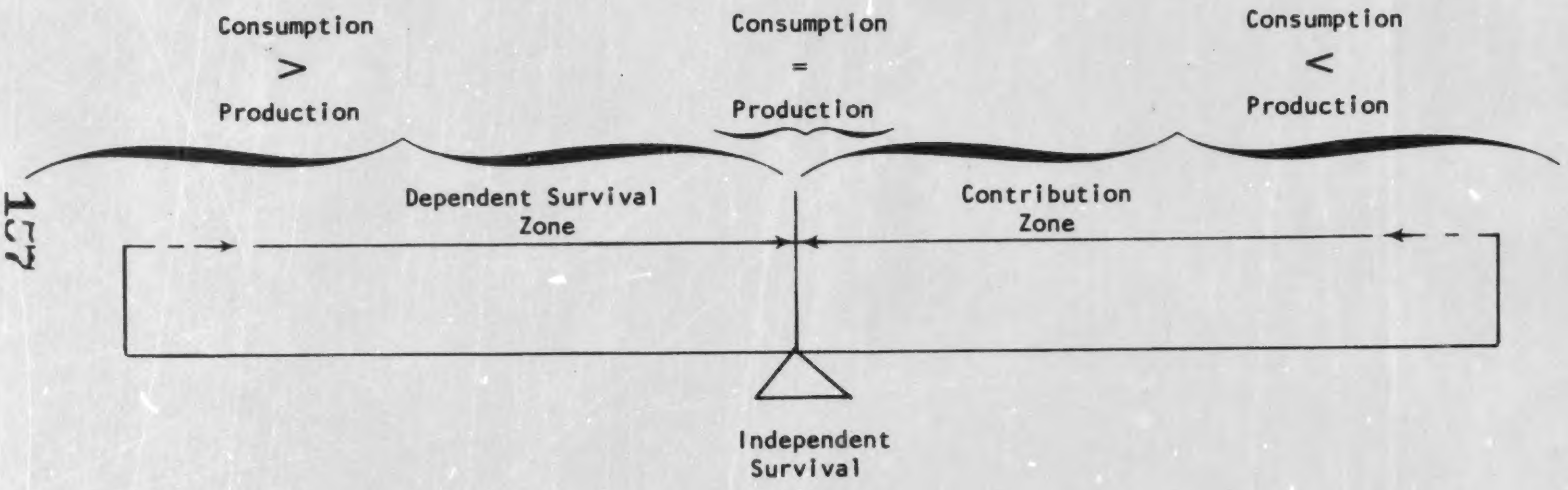

Manpower Administration Data
Census Population Demographic Charac.
FSES Computer Job Bank Data
BLS Statistics Occup./Ind. Labor Market Forecasts
Employment Security Automated Reporting System
Local Community Bus./Ind. Employment Reports
DATA ACQUISITION, ANALYSIS, VALIDITY AND RELIABILITY TESTS
to
DETERMINE RELATIONSHIP
of
Jobs Needing People
People Needing Jobs
People in Jobs
People now Training for Jobs
Employer Needs
Applicant's Needs
Jobs Filled
Jobs Soon To Be Filled
FOR THE DEVELOPMENT OF
QUASI-AUTOMATED DATA BASE for OCCUPATIONAL NEEDS ASSESSMENT
IN ORDER TO MAKE
ANALYSIS OF COMMUNITY NEEDS ASSESSMENT
Output Reports showing the Community's
JOBS - TRAINING - PEOPLE PERSPECTIVE

Tucker 1974

FIGURE 15

UTILITY CONTINUUM

SYMBOLS: > Greater than
= Equal to
< Less than

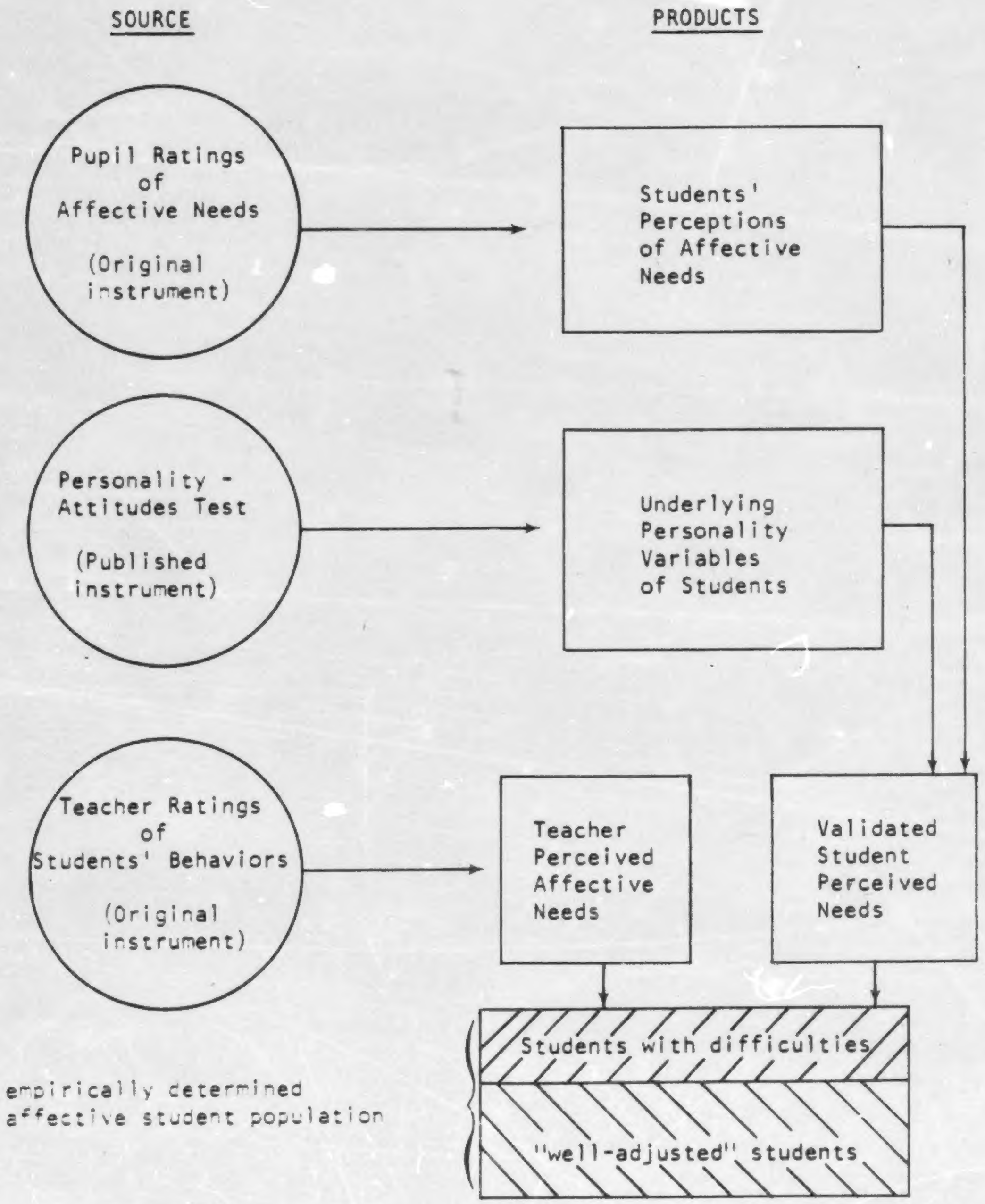

Consumption > Production
Consumption = Production
Consumption < Production
Dependent Survival Zone
Contribution Zone
Independent Survival

A proposed continuum of individual utility in our society. After Kaufman, Corrigan, and Johnson (1969).

Roger A. Kaufman, Educational System Planning, © 1972. By permission of Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

FIGURE 16

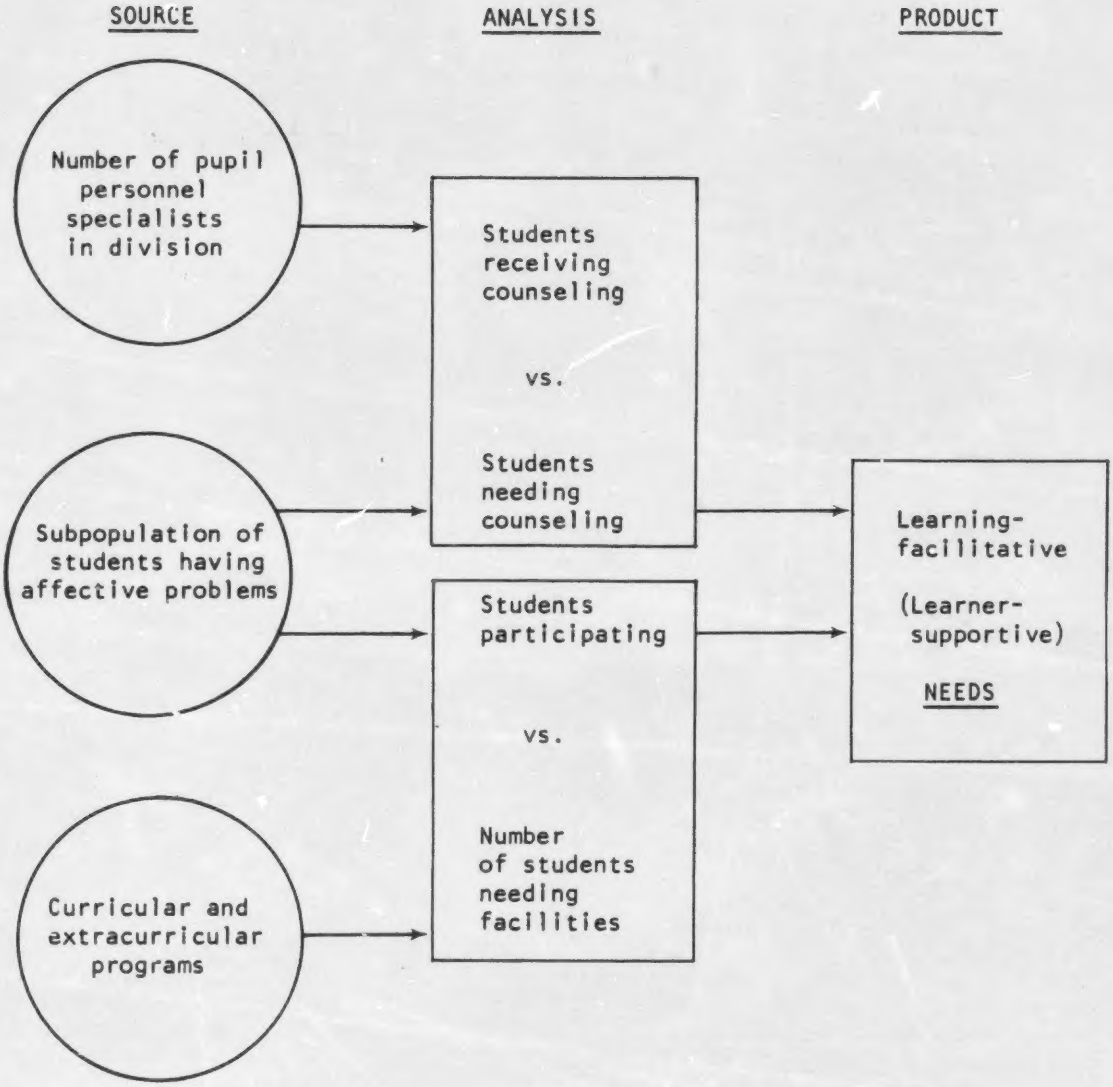
SAMPLE MODEL FOR THE ASSESSMENT OF AFFECTIVE NEEDS AT THE LEARNER-ORIENTED LEVEL


SOURCE
PRODUCTS
Pupil Ratings of Affective Needs
(Original instrument)
Students' Perceptions of Affective Needs
Personality - Attitudes Test
(Published instrument)
Underlying Personality Variables of Students
Teacher Ratings of Students' Behaviors
(Original instrument)
Teacher Perceived Affective Needs
Validated Student Perceived Needs
Students with difficulties
"well-adjusted" students
empirically determined affective student population

Woodbury 1970

FIGURE 17

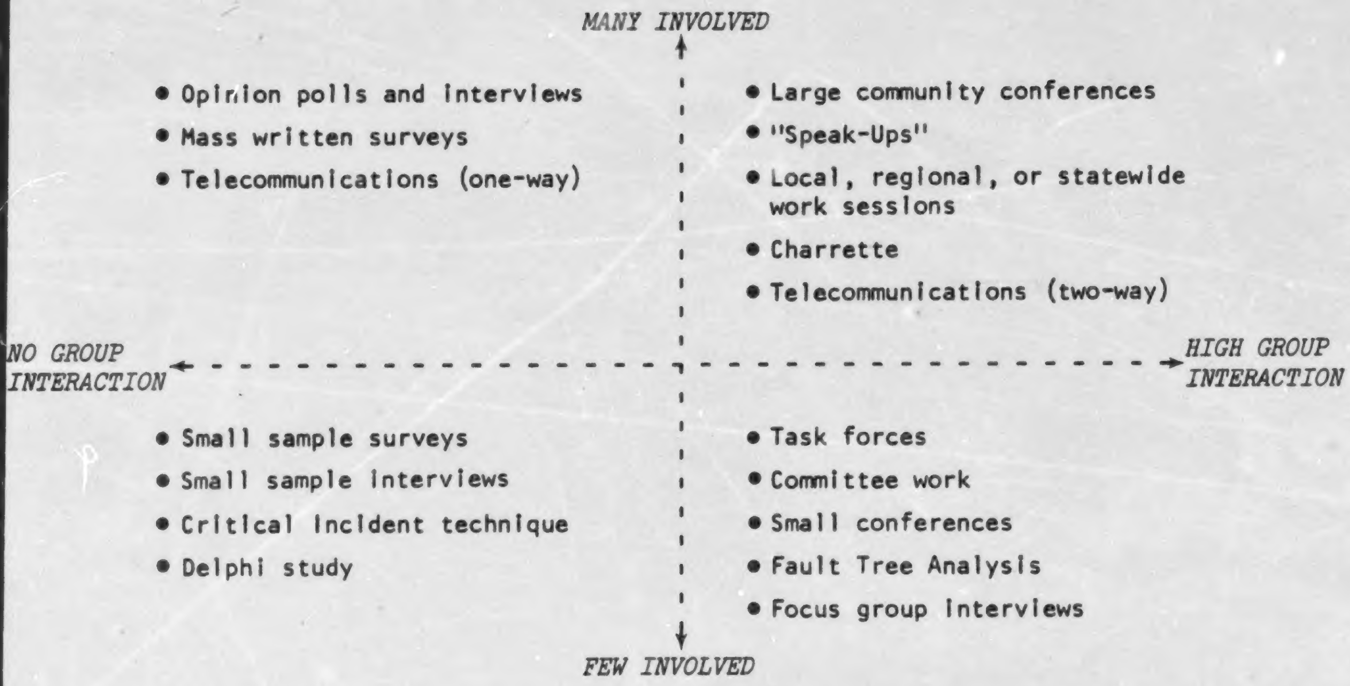
MODEL FOR ASSESSMENT OF AFFECTIVE NEEDS AT THE FACILITATIVE-SUPPORTIVE LEVEL


SOURCE
ANALYSIS
PRODUCT
Number of pupil personnel specialists in division
Students receiving counseling
vs.
Students needing counseling
Subpopulation of students having affective problems
Students participating
vs.
Number of students needing facilities
Curricular and extracurricular programs
Learning-facilitative
(Learner-supportive)
NEEDS

Woodbury 1970

FIGURE 18

COMMUNICATION METHODS IN RELATION TO NUMBERS INVOLVED AND AMOUNT OF INTERACTION


MANY INVOLVED
NO GROUP INTERACTION
HIGH GROUP INTERACTION
FEW INVOLVED

- Opinion polls and interviews
- Mass written surveys
- Telecommunications (one-way)

- Large community conferences
- "Speak-Ups"
- Local, regional, or statewide work sessions
- Charrette
- Telecommunications (two-way)

- Small sample surveys
- Small sample interviews
- Critical incident technique
- Delphi study

- Task forces
- Committee work
- Small conferences
- Fault Tree Analysis
- Focus group interviews

FIGURE 19

COMMUNICATION LINKAGES OF NEEDS ASSESSMENT

IN A SYSTEM CONTEXT

INPUTS		SYSTEM PROCESSES		OUTPUTS	
Sources	Messages	Non-Interactive Channels	Interactive Channels	Messages	Receivers
1.0 Internal to system	1.0 Goal statements	1.0 Written Surveys	1.0 Group card sorts	1.0 List of goals ranked for importance	1.0 internal system
1.1 Board	2.0 Judgments of goal importance	2.0 Rating scales	2.0 Small group discussions	2.0 Lists of goals ranked for attainment (perceived or actual)	1.1 Planning -Staff -Parents -Students
1.2 Management	3.0 Judgments of system responsibility to implement goals	3.0 Individual card sorts	3.0 Focus group interviews	3.0 Ranked learner needs	1.2 Policy -Management -Board
1.3 Staff	4.0 Perceived status of goal attainment	4.0 Public opinion polls (individual interviews)	4.0 Committees	4.0 Ranked institutional needs	2.0 External system
1.4 Clients (students)	5.0 Expectations of future states	5.0 Delphi studies	5.0 Community "speak-ups"	5.0 Statements of discrepancies- -quantitative -qualitative	2.1 Clients
2.0 External to system	6.0 Values	6.0 Critical Incident Technique	6.0 Games	6.0 Priority list of "needs"	2.2 Users
2.1 Clients (parents)	7.0 Concerns	7.0 Written futures scenarios	7.0 Role-playing	7.0 Recommendations for action	2.3 Legal bodies
2.2 Users- -business -agencies -industries	8.0 Performance data		8.0 Group scenarios (future games)	8.0 Reports	2.4 Legislative bodies
2.3 Legal bodies	9.0 Demographic data		9.0 Modified Delphi (interactive)		
2.4 Other educational agencies			10.0 Fault Tree Analysis		
2.5 Existing studies			11.0 Charrette		
			12.0 Telecommunications, two-way		

APPENDIX A

MODELS AND GENERAL INSTRUMENTS

The inclusion of any model or instrument in this Appendix does not constitute an endoresement of said model or instrument by the author of this study or by the National Institute of Education.

ALAMEDA COUNTY NEEDS ASSESSMENT MODEL (ACNAM)

Publisher: Office of the Alameda County Superintendent of Schools
685 A Street
Hayward, California 94541

Phone: (415) 881-6281

Date: 1974

Contents: User's Manual, Teacher Survey, Staff Development Survey, Parent Survey (English and Spanish versions), Pupil Survey (readers' and nonreaders' [picture] versions), Statistical Summary and Data Forms, Compilation of Survey Questions. For elementary level.

Cost: $5.00 for complete sample kit.

Contact Person: Dr. Belle Ruth Witkin, Coordinator, Research & Evaluation

BATTELLE'S SURVEYS

Publisher: Battelle's Center for Improved Education
505 King Avenue
Columbus, Ohio 43201

Phone: (614) 299-3151

Date: 1972 and 1973

Contents: A Survey of Educational Needs.

Secondary School: Questionnaires for administrators, teachers, students, parents, and community members.

Community College: Questionnaires for board of trustees, students, administrators, faculty, and supportive staff.

Cost: Fixed price basis to the district or college.

Contact Person: David L. Hamilton, Program Director
Management Systems

APPENDIX A - continued

BUCKS COUNTY QUALITY PROGRAM EDUCATION STUDY

Publisher: Office of the Bucks County Superintendent of Schools
Intermediate Unit #22
Division of Curriculum and Instruction Services
Ansley Building - Old Easton Road, R.D. #4
Doylestown, Pennsylvania 13901

Date: June 1971

Contents: 12 Booklets: General Needs Assessment Instrument for the 10 Goals of Pennsylvania, 10 specific instruments for pupil self-assessment.

Cost: $10.00 for one set

Contact Person: Dr. Raymond Bernabei

CSE ELEMENTARY SCHOOL EVALUATION KIT: NEEDS ASSESSMENT

Developer: Center for the Study of Evaluation, University of California at Los Angeles.

Publisher: Allyn and Bacon, Inc., Longwood Division
470 Atlantic Avenue
Boston, Massachusetts 02210

Date: 1972

Contents: Guidebook. Boxed Kit of Materials: Principal's Goal Rating Forms (12); teachers' and parents' card-sort goal assessment set (10 decks of 106 goal cards each, 10 sets of 5 rating mats, 50 rating forms); parents' goal rating questionnaire (48).

Cost: Kit, $147.50. Reorders: Principals' Goal Rating Forms (12) $6.95.

Teachers' and parents' card sort, $6.95 (10 decks of 106 goal cards, 10 sets of 5 rating mats.)

Teachers' and parents' rating forms (50), $6.95.

Parents' goal rating questionnaire (48), $8.95.

Authors: Ralph Hoepfner, Paul A. Bradley, Stephen P. Klein, Marvin C. Alkin - (CSE/UCLA)

APPENDIX A - continued

DALLAS MODEL

Publisher: Dallas Independent School District
3700 Ross Avenue
Dallas, Texas 75204

Phone: (214) 824-75204

Date: 1973-74

Contents:
1. 1973-74 Needs Assessment Survey
2. Sharing Decisions--Dallas Style. An Overview of Dallas' Model for Shared Decision Making.

Contact Person: Dr. Larry Ascough, Assistant Superintendent, Communications and Community Relations Department

ESA NEEDS ASSESSMENT PROCEDURE MANUAL

Publisher: Educational Systems Associates
300 East Huntland Drive
Austin, Texas 78752

Phone: (512) 454-8721

Date: 1974

Contents: Loose-leaf manual describing procedures to be considered in planning a comprehensive needs assessment study.

Cost: $7.55

Contact Person: Bruce Read, President

EPIC MODEL

Publisher: Education Innovators Press
P. O. Box 1[illegible]52
Tuscon, Arizona 85711

Phone: (602) 795-4210

Date: 1972

Contents: Needs Assessment, Booklet #8. Outlines steps for conducting needs assessment and subsequent evaluation of changes implemented to eliminate identified needs.

Contact Person: Wayne Roberson, President

APPENDIX A - continued

FLORIDA COMMUNITY COLLEGE MODEL

Publisher: Center for Community College Needs Assessment
1212 S. W. Fifth Street, #8
Gainesville, Florida 32601

Phone: (904) 392-0745

Date: 1974

Contents: Computerized program for model. Surveys and instruments for employer needs, goal setting, evaluating courses, student characteristics, follow-up of students, community perceptions, and management analysis.

Contact Person: Dr. Katie D. Tucker, Project Director

FRESNO MODEL

Publisher: Office of the Fresno County Superintendent of Schools
2314 Mariposa Street
Fresno, California 93721

Phone: (209) 488-3337

Date: July 1973 (Second Edition)

Contents: Booklet: The School and Community - Partners in Education. Description and flowcharts for community conference and development of needs and goals. Filmstrip/cassette orientation.

Contact Person: Dr. Wayne N. Jordan

INSTITUTIONAL GOALS INVENTORY (IGI)

Publisher: Educational Testing Service, College and University Programs
Princeton, New Jersey 08540

Date: 1974

Contents: Specimen set includes IGI Booklet/Answer Sheet, Instructions, Profile Chart, Order Form, and several reports and position papers.

Cost: Booklets, 35¢ each; scoring and reporting service, $1.25 per booklet; $200 minimum charge for scoring booklets in one report. IGI specimen set, $3.00.

APPENDIX A - continued

PHI DELTA KAPPA MODEL

Developer: Northern California Program Development Center
California State University
Chico, California 95926

Distributor: Phi Delta Kappa, Inc.
Commission on Educational Planning
P. O. Box 789
Bloomington, Indiana 47401

Phone: (916) 895-5328, (Chico State University)

Contents: Workshop packet contains: Administrator's Manual; goal cards, display board, and discs for group rating of goals; rating sheets (English and Spanish); programmed course for writing performance objectives, and manual for course.

Cost:

Program for 60 persons	--	$70.00
Refills for disposable items in the program	--	28.00
Workshop packet	--	3.00

Contact Persons: Dr. B. Keith Rose, NCPDC - Dr. Wilmer Bugher, Phi Delta Kappa

PUPIL-PERCEIVED NEEDS ASSESSMENT PACKAGE

Publisher: Research for Better Schools, Inc.
1700 Market Street
Philadelphia, Pennsylvania 19103

Phone: (215) 561-4100

Date: October 1974

Contents: Boxed kit of 5 booklets and cassette tape: planning a PPNA Project, developing and administering the PPNA indicator, processing and analyzing the data, sampling.

Cost: $25.00

Contact Person: Dr. Hsuan L. DeLorme, senior author

APPENDIX A - continued

WESTINGHOUSE SURVEY

Publisher:	Westinghouse Learning Corporation P. O. Box 30 Iowa City, Iowa 52240
Date:	April 1973
Contents:	Administrative Manual Assessment instrument suitable for community, educators, and secondary school students.
Cost:	$300 set-up; off-the-shelf booklets with 50 goal statements, 18¢ per booklet; scoring and processing, 50¢ per booklet scored; customizing, 25¢ per booklet additional. Costs include four copies of all reports.

WORLDWIDE MODEL

Publisher:	Worldwide Education and Research Institute 2315 Stringham Avenue Salt Lake City, Utah 84109
Phone:	(801) 521-9393
Date:	1974, Revised Edition
Contents:	Needs Assessment Source Book 10 manuals, keyed to master flowchart Filmstrip/cassette orientation.
Cost:	Source Book -- $10.00 Manuals -- 3.00 each Filmstrip -- 20.00

APPENDIX B

SPECIALIZED INSTRUMENTS

Assessing Career Needs of Learners. Grade 8

Publisher: Northwest Regional Educational Laboratory
710 W. W. Second Avenue
Portland, Oregon 97204

Date: 1974

Contents: Student self-assessment on careers, school attitudes, and perceptions of own knowledge and skills.

Evaluation Guidelines for Multicultural/Multiracial Education

Publisher: National Study of School Evaluation
2201 Wilson Blvd.
Arlington, Virginia 22201

Date: 1973

Contents: Two short opinionnaires, one for students and one for teachers.
Also guidelines and checklists for evaluating the school's multicultural program.

Funny Faces Game

Publisher: Operations Research, Inc.
1400 Spring Street
Silver Spring, Maryland 20910

Date: 1972

Contents: Early childhood self-esteem inventory. For individual administration.

Needs Assessment Package for Right to Read School-Based Centers

Publisher: Right to Read Program
U. S. Office of Education

Contents: Instructions and forms for collecting and displaying data on reading program from existing sources.

Norbar Attitude Assessment Survey

Publisher: Northern California Program Development Center
California State University, Chico
Chico, California 95926

Author: Jack L. Lutz

Contents: A Manual for survey construction, survey administration, and data utilization. Item bank and instruments included.

APPENDIX B - continued

PRIME (Program Research in Integrated Multiethnic Education)

Publisher: University of California
Riverside, California 92502

Date: 1973

Author: Dr. Jane R. Mercer, Principal Investigator

Contents: Evaluating Integrated Elementary Education. Technical Manual. Measuring Integrated Education in Elementary Schools. Training Manual for Data Collection. Includes extensive research data on the instruments.

Priority Counseling Survey

Publisher: Educators Assistance Institute
9841 Airport Blvd.
Los Angeles, California 90045

Date: 1972

Authors: Thomas W. Smith, Clarence D. Johnson

Contents: Questionnaires on career interests and counseling needs for junior and senior high school students.

Procedures for Surveying School Problems

Publisher: Human Resources Research Organization
300 North Washington Street
Alexandria, Virginia 22314

Date: 1974

Contents: Manual, containing School Demographic Information Form, Problem Area Survey For School Staff Members, and Problem Area Survey for Students.

Student Opinion Inventory

Publisher: National Study of School Evaluation
2201 Wilson Boulevard
Arlington, Virginia 22201

Date: 1974

Contents: Survey of student opinion on the school's instructional program. Manual has instructions for administering, scoring, and interpreting, and reliability and validity data.

APPENDIX B - continued

Student Reactions to College (SRC)

Publisher: Educational Testing Service
Community and Junior College Programs
Box 2812
Princeton, New Jersey 08540

Date: 1973

Contents: Self-administered questionnaire for reactions to experiences or situations in community or junior college.

Costs: Specimen set, $4.00. Booklets, 35¢ each; scoring and reporting service, $1.25 per booklet; $350 minimum charge.

TARGET (To Assess Relevant Goals of Education Together)

Publisher: Blaine Wishart
966 King George Way
El Dorado Hills, California 95630

Date: 1972

Contents: Manual and materials for "Delphi" study and the TARGET game. Includes various indices for interpretation.

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ADDENDUM

TO

AN ANALYSIS OF NEEDS ASSESSMENT TECHNIQUES FOR EDUCATIONAL PLANNING AT STATE, INTERMEDIATE, AND DISTRICT LEVELS

Methodology Report

by

Belle Ruth Witkin

Office of the Alameda County Superintendent of Schools

Hayward, California

NIE-G-74-0062

May 1975

METHODOLOGY

The purpose of this study was to analyze and interpret the state of the art of needs assessment techniques for educational planning, and to provide visibility (1) to those current models, procedures, and instruments which hold promise for facilitating such planning, and (2) to those which might impede or confound the planning. The report was directed to administrators and researchers with responsibility for needs assessment, planning, or evaluation at state, intermediate, and district levels.

The study was performed in three phases: input, analysis, and reporting. It extended from September 1974 to May 1976.

INPUT PHASE

Advisory committee. An advisory committee of 19 persons knowledgable about various phases of educational needs assessment was set up. All but two were from California, because of budgetary limitations. They were chosen to represent a cross-section of educational responsibility, ethnicity, and geographic dispersion. A list of the committee is attached.

The full Advisory Committee met three times--in September, October, and February. They established criteria for a good needs assessment model, reviewed instruments that were available at the time, suggested certain analytic procedures, and reviewed the first draft that was submitted to NIE. In addition, a small subcommittee met with me twice to work on the first draft and later to assist with reorganization of the report following the NIE and committee recommendations.

Literature search. There were three major methods for obtaining studies and instruments: (1) A comprehensive search of published and unpublished studies was made through ERIC and similar research banks, mostly through the computer search services of the San Mateo County Schools Office. (2) A research assistant also conducted an independent search in the libraries of University of California, Berkeley, and California State University, Hayward. She set up research files, reviewed studies, and compiled abstracts and bibliographies. (3) The most productive method of obtaining recent information and unpublished techniques was to follow leads from Advisory Committee members and educators outside of California who had surveyed current practices. Since much of the information on development of needs assessment models and instruments is not in the literature, the best sources of information were key persons to whom I was referred. They in turn supplied more names, which I followed up.

Collection of models and instruments. Kits and instruments of various kinds were ordered in October and November. Some were borrowed, some had to be purchased. Several of the most comprehensive ones did not arrive until December or January, and some materials ordered earlier have come as late as May.

Site visit. It was not possible to make site visits to districts to observe the actual conduct of a needs assessment. However, I attended a national educational needs assessment conference at Lake Buena Vista, Florida, sponsored by the Center for Community Needs Assessment at University of Florida. The purpose of the conference was to demonstrate a computerized model developed by a consortium of seven Florida community colleges. I obtained information on community college and university studies, which I incorporated in the report. I also disseminated information about my own study.

While in Florida I spent two days in Tallahassee, with Michael Knight of the state department of education and Dr. Garret Foster of Florida State University, who have done considerable work on needs assessment. They supplied much information which was useful in the report.

Case studies. Case reports on six widely used and different approaches were gathered through telephone interviews by a research assistant, from lists of users supplied by the developers. Supplementary information was contained in reports and letters from the informants. The case studies in the first draft were then sent to the informants for factual verification. In the final draft several studies were deleted, the others were completely rewritten in a more direct communicative style, and information on results of the assessment was added.

ANALYSIS PHASE

Evaluative criteria. At its first two meetings, the Advisory Committee reached a consensus on criteria for evaluating needs assessment models. I also examined criteria proposed by other researchers. These were all included in the first draft of the study, but were integrated into one short list for the final report.

These criteria were not the only basis for evaluating the advantages and disadvantages of the models, however, because there is so much variation in needs assessment techniques and in their implementation. Therefore, the criteria were supplemented by success and failure modes of analysis derived from a system approach. A modified Fault Tree Analysis was applied to a basic needs assessment paradigm consisting of four components, and the resulting strengths and limitations of various models which were derived were incorporated in the study.

Analysis of models. This occupied about three months. I examined all kits and models, read guidebooks and manuals, read reports of studies by other investigators, and summarized key descriptors on a master matrix. I then summarized the major advantages and disadvantages of each approach.

REPORTING PHASE

First draft The first draft (actually, my fourth), was sent to NIE on February 7, and was immediately reviewed by my Advisory Committee. Their recommendations for deletions, revisions, and reorganization of the chapters were then integrated with the comments from the NIE reviewers for revision of the draft.

A small subcommittee of the Advisory Committee met with me twice to assist with the revision, and to construct a matrix of model characteristics.

The final draft of the study represents a complete revision of the original. Stylistic changes were made, theoretical material was greatly reduced, and chapters on communication strategies and social fairness and bias were added.

EVALUATION OF THE METHODOLOGY

In general, the research methods and management scheme worked fairly well, but the process took much longer than I had anticipated. The acquisition of materials alone needed at least three months, and a comparable amount of time for reading and analysis. Although I had already conducted a preliminary search of the literature before submitting the proposal, I found that the really current material had to be found through non-traditional research methods--mainly by relying on a national network of informed educators.

If I were conducting the study again, I would make these changes:

1. Have a much smaller Advisory Committee, with a larger proportion of them from outside California. They would meet oftener and assist more substantively with review of the materials. This would necessitate a larger budget, of course.

2. Keep a research assistant for the duration of the project, to track down information, verify details, and assist with preparing copy for the secretaries.

3. Send out a "user's survey" to a fair sampling of people who have used major models, to verify actual practices.

4. Have a clearer understanding as to what is meant by an "interpretive study." Although I believed that I was following the guidelines and was writing for the practitioner, my impression from the reviews was that the reviewers did not really want an interpretive study of the research, but rather a manual on how to conduct a needs assessment, which was not the original intent of the study.

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